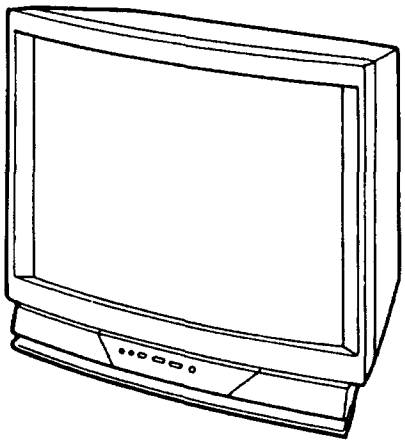
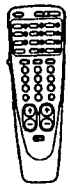
KV-27S10/27S15/29RS10
RM-Y116 RM-Y121 RM-Y116

KV-29RS15/32S10/32S15
RM-Y121 RM-Y116 RM-Y121

SERVICE MANUAL





RM-Y121 RM-Y116

US Model

KV-27S10 Chassis No. SCC-F84L-A
KV-27S15 Chassis No. SCC-F84M-A
KV-32S10 Chassis No. SCC-F84N-A
KV-32S15 Chassis No. SCC-F84P-A

Canadian Model

KV-27S10 Chassis No. SCC-F85G-A
KV-27S15 Chassis No. SCC-F85H-A
KV-32S10 Chassis No. SCC-F85J-A
KV-32S15 Chassis No. SCC-F85K-A

E Model

KV-29RS10 Chassis No. SCC-F89F-A
KV-29RS15 Chassis No. SCC-F89G-A

AA-1 CHASSIS

MODELS OF THE SAME SERIES	
KV-27S10/27S15/29RS10 KV-29RS15/32S10/32S15	KV-27TS29/27TS32/27TS36 KV-32TS36/32TS46
KV-2970RS/2970M/2975M	KV-27V55/29V55M

SPECIFICATIONS

Television system	American TV standards
Channel coverage	VHF: 2-13 UHF: 14-69 CABLE TV: 1-125
Picture tube	Hi-Black™ Trinitron® tube 27-inch picture measured diagonally 29-inch picture measured diagonally (KV-27S10/27S15/29RS10/29RS15) 32-inch picture measured diagonally 34-inch picture measured diagonally (KV-32S10/32S15)
Antenna	75-ohm external antenna terminal for VHF/UHF
Input	VIDEO and S VIDEO S VIDEO IN Y: 1 Vp-p, 75-ohms unbalanced, sync negative C: 0.286 Vp-p (Burst signal), 75-ohms (KV-27S15/29RS15/32S10/32S15) Video : 1 Vp-p, 75-ohms unbalanced, sync negative Audio : 500 mVrms (100% modulation) Impedance: 47 kilo-ohms

- Continued on next page -

TRINITRON® COLOR TV

SONY®

MICROFILM

996580101

Output AUDIO OUT :
More than 408 mVrms at the maximum volume setting (variable)
More than 408 mVrms (fix)
Impedances : 5 kilo-ohms
(KV-27S15/29RS15/32S15)

Speaker output 5W×2

Power requirements 120 V AC, 60Hz

Power consumption

KV-27S10	165 W
KV-27S15	170 W
KV-29RS10	165 W
KV-29RS15	170 W
KV-32S10	190 W
KV-32S15	195 W
standby mode	6 W

Dimensions/Weight

	Dimensions (w/h/d)	Weight
KV-27S10	661×603×524 mm ($26_{1/8}$×$23_{3/4}$×$20_{3/4}$ inches)	42.2 kg (93 lbs)
KV-27S15	661×603×524 mm ($26_{1/8}$×$23_{3/4}$×$20_{3/4}$ inches)	42.2 kg (93 lbs)
KV-29RS10	661×603×524 mm ($26_{1/8}$×$23_{3/4}$×$20_{3/4}$ inches)	42.2 kg (93 lbs)
KV-29RS15	661×603×524 mm ($26_{1/8}$×$23_{3/4}$×$20_{3/4}$ inches)	42.2 kg (93 lbs)
KV-32S10	781×714×613 mm ($30_{3/4}$×$28_{1/8}$×$24_{1/4}$ inches)	69 kg (152 lbs 9 oz)
KV-32S15	781×714×613 mm ($30_{3/4}$×$28_{1/8}$×$24_{1/4}$ inches)	69 kg (152 lbs 9 oz)

Supplied accessories (KV-27S10/29RS10/32S10)
Remote Commander RM-Y116 (1)
with 2 size AA (R6) batteries
(KV-27S15/29RS15/32S15)
Remote Commander RM-Y121 (1)
with 1 size AA (R6) battery

Optional accessories U/V mixer EAC-66
Connecting cable
VMC-810S/820S, VMC-720M,
YC-15V/30V, RK-74A

Design and specifications are subject to change without notice.

(CAUTION)

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

(ATTENTION)

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURTCIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION!!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE.
LE CHÁSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ Á L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS ÁLA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MAPQUE ⚠ SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES CONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

SAFETY CHECK-OUT

(US model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer :

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any). Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate ; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground ; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60 – 100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

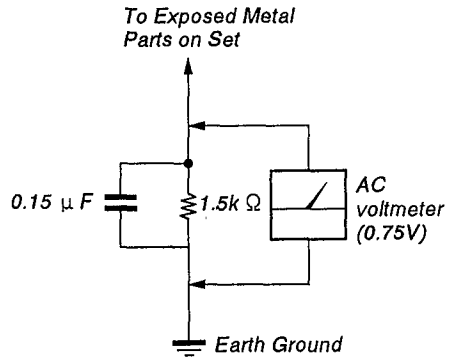


Fig. A. Using an AC voltmeter to check AC leakage.

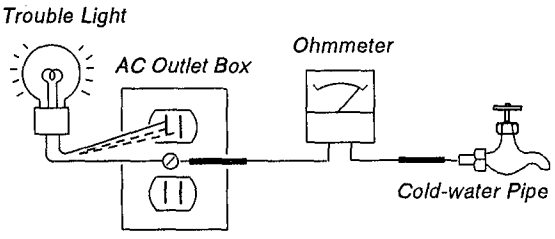


Fig B. Checking for earth ground.

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● KV-27S10/29RS10/32S10

Step 1: Hookup

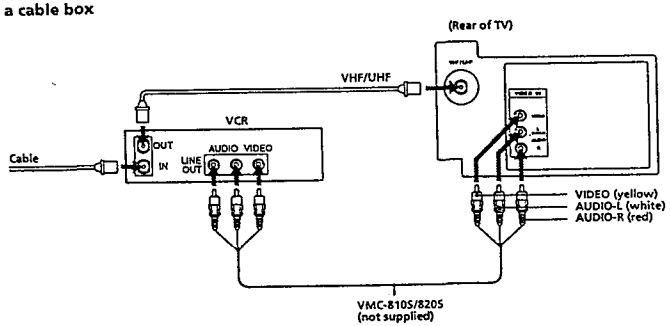
Connecting an antenna/cable TV system with a VCR

To connect your VCR to the TV, first check the model number of your TV and select the corresponding connection. For details on connection, see the instruction manual of your VCR. Before making connection, disconnect the AC power cords of the equipment to be connected.

After making these connections, you will be able to do the following:

- View the playback of video tapes
- Record one TV program while viewing another program

Without a cable box



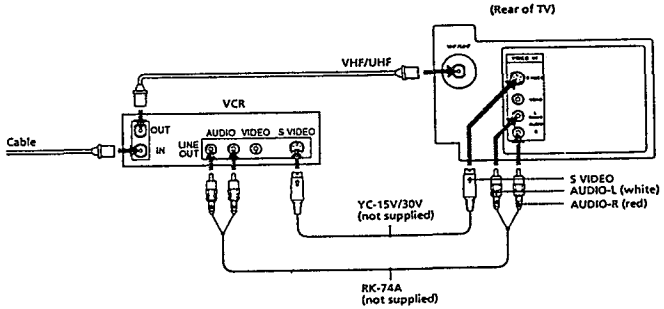
Note

- To connect a monaural VCR, connect the audio output of the VCR to AUDIO-L (mono) of VIDEO 1 IN on the TV.

To an S video equipped VCR without a cable box

■ *KV-27V10/29V10C/29V10M/32S10 only*

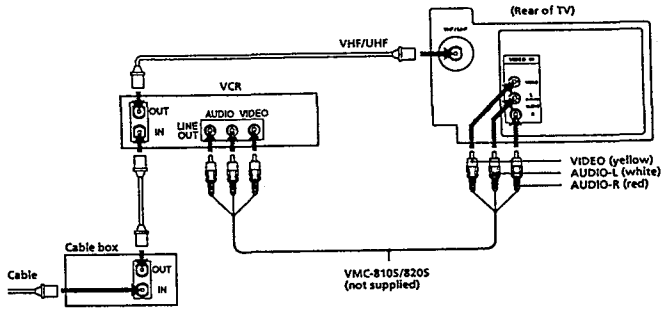
If your VCR has an S video output jack, hook up as follows and then set S VIDEO to ON on your TV (page 12). (It is set to ON at the factory.)



SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

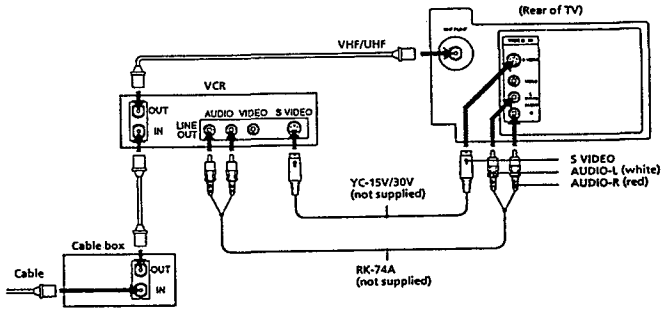
With a cable box



Note

- To connect a monaural VCR, connect the audio output of the VCR to AUDIO-L (mono) of VIDEO 1 IN on the TV.

TO an S video equipped VCR with a cable box



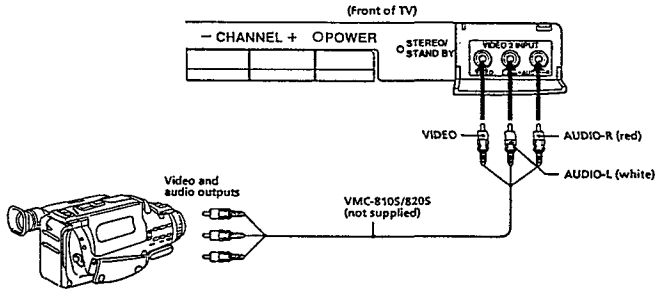
Note

- Video signals are composed of Y (luminance) and C (chroma) signals. The S connection sends the two signals separately preventing degradation, and gives better picture quality compared to conventional connection.

Connecting a camcorder

■ *KV-27V10/29V10C/29V10M only*

This connection is convenient for viewing a camcorder.



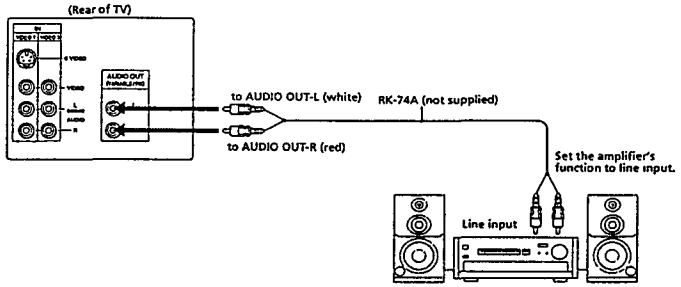
Note

- To connect a monaural camcorder, connect the audio output of the VCR to AUDIO-L (mono) of VIDEO 2 INPUT on the TV.

Connecting an audio system

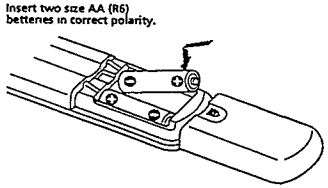
■ *KV-27V10/29V10C/29V10M only*

When connecting audio equipment, see page 17 and 18 for more information.

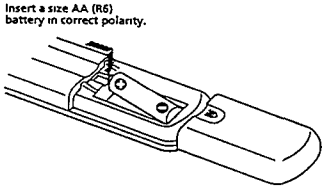


Step 2: Setting up the remote commander

■ *KV-27S10/29RS10C/32S10*
RM-Y116 remote commander



■ *KV-27V10/29V10C/29V10M*
RM-Y117 remote commander



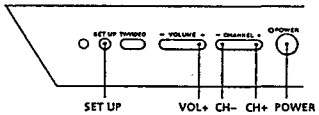
Notes

- With normal use, the battery should last for approximately six months.
- If you do not use the remote commander for an extended period of time, remove the battery to avoid possible damage from battery leakage.
- Do not handle the remote commander roughly. Do not drop it step on it or let it get wet.
- Do not place the remote commander in locations where it is direct sunlight, near a heater, or where the humidity is high.

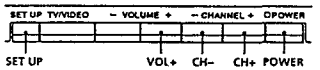
Step 3: Setting up the TV automatically (AUTO SET UP)

You can set up your TV easily by using AUTO SET UP feature. It presets all the receivable channels. To set up the TV manually, see "Setting cable TV on or off" and "Presetting channels" (page 11).
If the TV is set to a video input, you cannot execute AUTO SET UP. Press TV/VIDEO so that a channel number appears.

(Front of KV-27S10/29RS10/32S10)

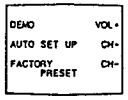


(Front of KV-27V10/29V10C/29V10M)



1 Press POWER to turn the TV on.

2 Press SET UP on the front of the TV.
The menu appears.



3 Press CH+.

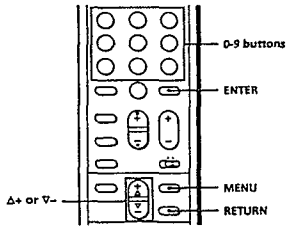
"AUTO PROGRAM" appears on the screen and the TV starts scanning and presetting channels automatically. When all the receivable channels are stored, "AUTO PROGRAM" disappears and the lowest numbered channel is displayed. If the TV receives cable TV channels, CATV is set to ON automatically.

Note
- If more than 90 seconds elapse after you press a button, the menu disappear automatically.

DEMO: To browse the main functions.
Press VOL+ in step3. The functions and menus a displayed one by one.
FACTORY PRESET: To restore the factory settings when you are confused about the TV settings.
Press CH– in step3. The settings of picture and sound are restored to the factory setting.

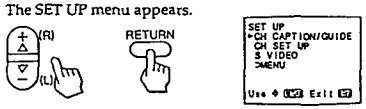
Erasing or adding channels

After AUTO SET UP you can erase unnecessary channels or add the channels you want. Preset channels during the day rather than late at night, when some channels may not be broadcasting.



1 Press MENU.
The main menu appears.

2 Press Δ+ or ∇– to select SET UP and press RETURN.
The SET UP menu appears.

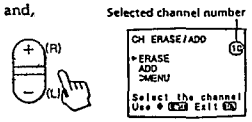


3 Press Δ+ or ∇– to select CH SET UP and press RETURN.
The CH SET UP menu appears.

4 Press Δ+ or ∇– to select CH ERASE/ADD and press RETURN.
The CH ERASE/ADD menu appears.

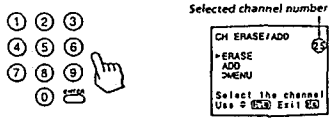
5 Erase and/or add the channel you want:

To erase an unwanted channel
(1) Make sure the cursor (▸) is beside ERASE.
(2) Press CH +/– to select the channel you want to erase and,



(3) press RETURN.
The indication "–" appears beside the channel number, showing that the channel is erased from the preset memory.

To add a channel that you want
(1) Press Δ+ or ∇– to select ADD.
(2) Press the 0 – 9 buttons to select the channel you want to add and press ENTER and,



(3) press RETURN.
The indication "+" appears beside the channel number, showing that the channel is added to the preset memory.

6 To erase and/or add other channels, repeat step 5.

7 When you finish, press MENU.

Note
- If you erase or add a VHF or UHF channel, the cable TV channel with the same number is also erased or added, and vice versa.

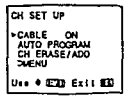
Setting cable TV on or off

If you have connected the TV to a cable TV system, set CABLE to ON, the factory setting. If not, set CABLE to OFF.
You do not have to do this procedure if you execute AUTO SET UP (page 9). Do this procedure only when you want to set it manually.

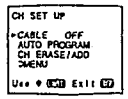
1 Press MENU.

2 Press Δ+ or ∇– to move the cursor (▸) to SET UP and press RETURN.

3 Press Δ+ or ∇– to move the cursor (▸) to CH SET UP and press RETURN.



4 Set CABLE to ON or OFF:
(1) Make sure the cursor (▸) is beside CABLE and press RETURN.
If the cursor is not beside CABLE, press Δ+ or ∇– to move the cursor and press RETURN.
(2) Press Δ+ or ∇– to select ON or OFF and,
(3) press RETURN.



5 Press MENU to return to the original screen.

Note
- If CH SET UP menu appears in black, the TV is set to a video input and you cannot select CABLE. Press TV/VIDEO so that a channel number appears.

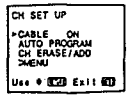
Presetting channels

You can preset TV channels easily by AUTO PROGRAM feature.
You do not have to do this procedure if you execute AUTO SET UP (page 9). Do this procedure only when you want to set it manually.

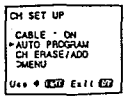
1 Press MENU.

2 Press Δ+ or ∇– to move the cursor (▸) to SET UP and press RETURN.

3 Press Δ+ or ∇– to move the cursor (▸) to CH SET UP and press RETURN.



4 Press Δ+ or ∇– to move the cursor (▸) to AUTO PROGRAM and press RETURN.



"AUTO PROGRAM" appears on the screen and the TV starts scanning and presetting channels automatically. When all the receivable channels are stored, "AUTO PROGRAM" disappears and the lowest numbered channel is displayed.

5 Press MENU to return to the original screen.

Note
- If the CH SET UP menu appears in black, the TV is set to a video input and you cannot select AUTO PROGRAM. Press TV/VIDEO or TV so that a channel number appears.

Setting S video on or off

■ *KV-27V10/29V10C/29V10M/32S10 only*

You can change the S VIDEO menu to ON or OFF.

1 **Press TV/VIDEO select VIDEO 1.**

2 **Press MENU.**

3 **Press △+ or ▽– to move the cursor (▶) to SET UP and press RETURN.**

4 **Press △+ or ▽– to move the cursor (▶) to S VIDEO and press RETURN.**

5 **Press △+ or ▽– to select ON or OFF and press RETURN.**

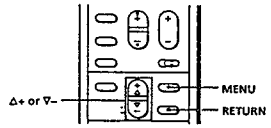
6 **Press MENU to return to the original screen.**

Note
- If S VIDEO appears in black, set a video input to VIDEO 1.
- If you set S VIDEO to ON, the TV automatically receive S video signals whenever a VCR with S video is connected

Changing the menu language

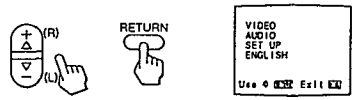
■ *KV-29RS10/29V10C/29V10M only*

If you prefer Spanish to English, you can change the menu language.

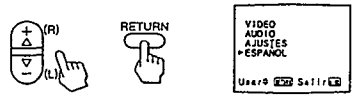


1 **Press MENU.**
The main menu appears.

2 **Press △+ or ▽– to move the cursor (▶) to ENGLISH and press RETURN.**



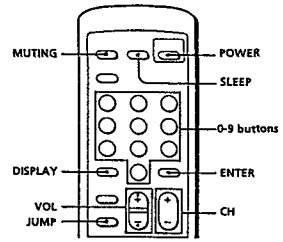
3 **Press △+ or ▽– to select ESPAÑOL and press RETURN.**



4 **Press MENU to return to the original screen.**

Note
- Certain parts of the ESPAÑOL menus remain in English

Watching the TV

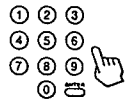


1 **Press POWER to turn the TV on.**

If "VIDEO" appears on the screen, press the TV/VIDEO button so that a channel number appears.

2 **Select the channel you want:**

To select a channel directly
Press the 0 – 9 buttons and then press ENTER.



The channel can also be selected without pressing ENTER.

To scan through channels
Press CH +/– until the channel you want appears

3 **Press VOL +/– to adjust the volume.**

Note
- Set the CABLE BOX/TV selector to TV. *(KV-27V10/29V10C/29V10M only)*

Switching quickly between two channels

Press JUMP.
The channel you watched previously appears.

Pressing JUMP again switches back the channel.

Muting the sound

Press MUTING.
"MUTING" appears on the screen.

To restore the sound, press MUTING again, or press VOL +.

Displaying on-screen information

Use this feature to check the channel number, channel caption (if set), and MTS mode (if SAP is selected).

Press DISPLAY.

To cancel the display, press DISPLAY again

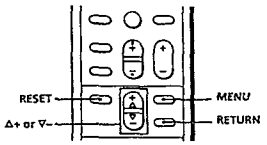
Setting the Sleep Timer

The TV stays on for the length of time you specify and then shuts off automatically.
Press SLEEP repeatedly until the time (minutes) you want appears.
Each time you press SLEEP, the time changes as follows 30 → 60 → 90 → OFF.

To cancel the Sleep Timer, press SLEEP repeatedly until "SLEEP OFF" appears, or turn the TV off.

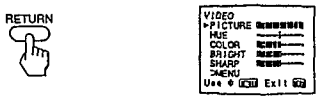
Adjusting the picture (VIDEO)

When watching TV programs, you can adjust the quality of the picture to suit your taste.
You can adjust the picture of video input(s) as well. These settings are stored separately from those for the TV picture.

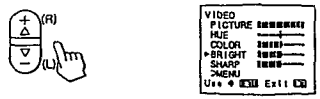


1 *Press MENU.*

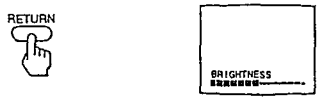
2 **Make sure the cursor (▶) is beside VIDEO and press RETURN.**



3 **Select the item you want to adjust.**
For example:
(1) To adjust brightness, press Δ+ or ∇– to select BRIGHT and,

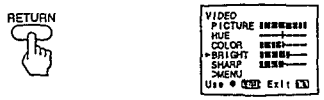


(2) press RETURN.



4 **Adjust the selected item:**
(1) Press Δ+ or ∇– to adjust the item and,

(2) press RETURN.
The new setting appears in the VIDEO menu.



For details on each item, see "Description of adjustable items" below.

5 **To adjust other items, repeat steps 3 and 4.**

Description of adjustable items

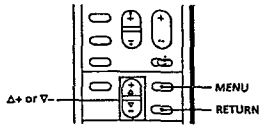
Item	Press Δ+ to	Press ∇– to
PICTURE	Increase picture contrast and give vivid color	Decrease picture contrast and give soft color
HUE	Make skin tones become greenish	Make skin tones become purplish
COLOR	Increase color intensity	Decrease color intensity
BRIGHT	Brighten the picture	Darken the picture
SHARP	Sharpen the picture	Soften the picture

To restore the factory settings
Press RESET while the VIDEO menu is displayed.
All the settings are restored to the factory settings.

Adjusting screen brightness automatically (LUMISPONDER)

■ ***KV-27V10/29V10C/29V10M only***

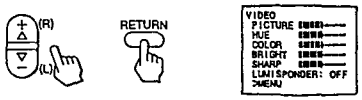
The LUMISPONDER feature adjusts the brightness of the screen automatically according to the ambient brightness. The LUMISPONDER function automatically adjusts the level set by the user in the VIDEO menu to the standard.



1 **Press MENU.**

2 **Press Δ+ or ∇– to select VIDEO and press RETURN.**

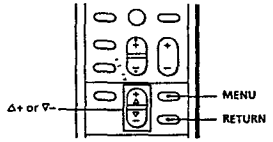
3 **Press Δ+ or ∇– to select LUMISPONDER and press RETURN.**



4 **Press Δ+ or ∇– to select ON or OFF and press RETURN.**

Adjusting the sound (AUDIO)

You can adjust the quality of the sound to suit your taste.
You can adjust the sound of video input(s) as well. These settings are stored separately from those for the TV sound.



1 **Press MENU.**

2 **Press Δ+ or ∇– to select AUDIO and press RETURN.**

3 **Select the item you want to adjust.**
For example:
(1) To adjust bass, press Δ+ or ∇– to select BASS and,

(2) press RETURN.

4 Adjust the selected item:
(1) Press △+ or ▽– to adjust the item and,

(2) press RETURN.
The new setting appears in the AUDIO menu.

For details on each item, see "Description of adjustable items" below.

5 To adjust other items, repeat steps 3 and 4 above.

Description of adjustable items

Item	Press △+ to	Press ▽– to
TREBLE	Increase the treble response	Decrease the treble response
BASS	Increase the bass response	Decrease the bass response
BALANCE	Emphasize the right speaker's volume	Emphasize the left speaker's volume

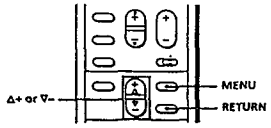
To restore the factory settings
Press RESET while the AUDIO menu is displayed.

Note
- When SPEAKER (page 17) is OFF and AUDIO OUT (page 18) is FIXED condition, sound menu appears mid-level setting and it cannot be adjusted.

Listening to surround sound (SURROUND)

■ *KV-27V10/29V10C/29V10M only*

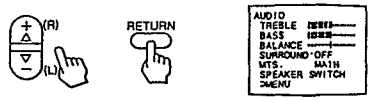
SURROUND feature simulate sound reproduction with the atmosphere of a movie theater or a concert hall. Surround sound is only effective for stereo programs.



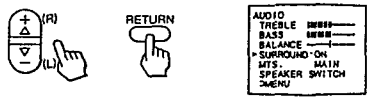
1 Press MENU.

2 Press △+ or ▽– to select AUDIO and press RETURN.

3 Press △+ or ▽– to select SURROUND and press RETURN.

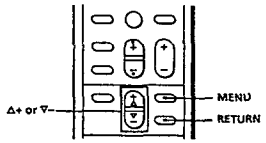


4 Press △+ or ▽– to select ON and press RETURN.



Selecting stereo or bilingual programs (MTS)

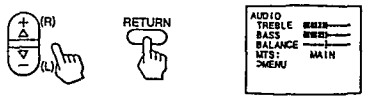
The Multichannel TV Sound (MTS) feature allows you to enjoy stereo sound or Second Audio Programs (SAP) at your choice. The initial setting is stereo sound (MAIN).



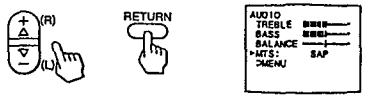
1 Press MENU.

2 Press △+ or ▽– to select AUDIO and press RETURN.

3 Press △+ or ▽– to select MTS and press RETURN.



4 Press △+ or ▽– to select MAIN, SAP, or MONO and press RETURN.



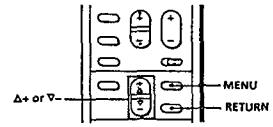
Choose	To
MAIN	Listen to stereo sound. The STEREO indicator on the TV lights up while a stereo broadcast is received.
SAP	Listen to bilingual programs. The sound of non-SAP programs will be muted when SAP is selected.
MONO	Reduce noise during stereo broadcasts.

Note
- Stereo and SAP sounds are subject to program sources.

Setting the speaker switch (SPEAKER)

■ *KV-27V10/29V10C/29V10M only*

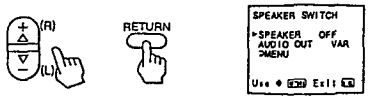
You may switch off the TV speakers when, for example, you want to listen to the sound through a stereo system.



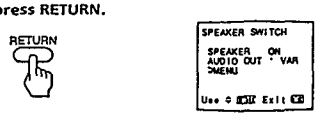
1 Press MENU.

2 Press △+ or ▽– to select AUDIO and press RETURN.

3 Press △+ or ▽– to select SPEAKER SWITCH and press RETURN.



4 Make sure the cursor (▶) is beside SPEAKER and press RETURN.

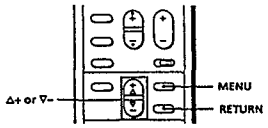


5 Press △+ or ▽– to select ON or OFF and press RETURN.

Setting audio out (AUDIO OUT)

■ *KV-27V10/29V10C/29V10M only*

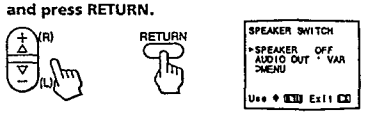
You can select audio out to variable or fixed when SPEAKER is set to OFF.
Audio out is variable when SPEAKER is set to ON.



1 Press MENU.

2 Press Δ+ or ∇– to select AUDIO and press RETURN.

3 Press Δ+ or ∇– to select SPEAKER SWITCH and press RETURN.



4 Press Δ+ or ∇– to select AUDIO OUT and press RETURN.

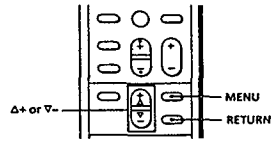
5 Press Δ+ or ∇– to select VAR or FIXED and press RETURN.

VAR: Sound output varied according to the TV settings. You can adjust the volume, bass, treble and balance.
FIXED: Sound output is always fixed to a certain level.
You cannot adjust the volume.

Customizing the channel number buttons (CH CAPTION/ GUIDE)

You can choose up to 12 channels, caption each channel, and assign a specific channel number button to each channel. This feature allows you to select your favorite channels easily by name. For example, you can name channel 20 "ESPN," and assign the channel number 4 button to it.

Setting captions to favorite channels

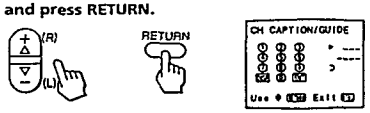


1 Press TV/VIDEO to select TV mode.

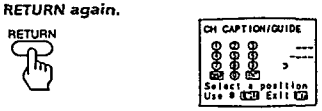
2 Press MENU.

3 Press Δ+ or ∇– to select SET UP and press RETURN.

4 Press Δ+ or ∇– to select CH CAPTION/GUIDE and press RETURN.



5 Press RETURN again.



6 Press Δ+ or ∇– to select a channel guide number button and press RETURN.
Each time you press Δ+ or ∇–, the channel numbers change to red in turns. The channel number button you select will be the one you press to call up your favorite channel.

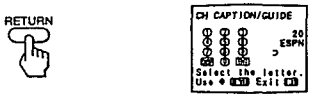
7 Press Δ+ or ∇– to select the channel that you want to caption and press RETURN.

8 Enter the letters (up to four) to caption the channel:
(1) Press Δ+ or ∇– to select the first letter.
Each time you press Δ+ or ∇–, the letter changes as shown below and,

0⟷1⟷...⟷9⟷A⟷B⟷...⟷Z⟷&⟷/⟷_(blank space)

(2) press RETURN.

(3) Repeat steps (1) and (2) to select the remaining letters and press RETURN.

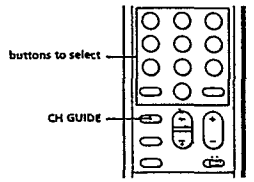


9 Repeat step 5 to 7 to caption other channels.

To erase a caption
Press RESET after step 5.

Notes
- The position number you already selected appears in yellow.
- If the CH CAPTION/GUIDE menu appears in black, the TV is set to a video input and you cannot select CH CAPTION/GUIDE.
  Press TV/VIDEO to select TV mode.
- If more than 90 seconds elapse after you press a button, the menu disappear automatically.

Selecting a captioned channel



1 Press CH GUIDE.
The CHANNEL GUIDE menu appears showing channel captions and the corresponding channel number buttons.

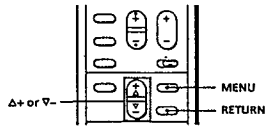
2 Press a channel number button, the DISPLAY or ENTER button to select the channel you want.

To cancel the CHANNEL GUIDE menu
Press CH GUIDE again.

Setting video labels (VIDEO LABEL)

■ *KV-27V10/29V10C/29V10M only*

This feature allows you to label each input mode so that you can easily identify the connected equipment. For example, you can label VIDEO 1 IN as VHS



1 Press MENU.

2 Press Δ+ or ∇– to select SET UP and press RETURN.

3 Press Δ+ or ∇– to select VIDEO LABEL and press RETURN.

4 Press Δ+ or ∇– to select the input mode you want to label and press RETURN.

5 Press Δ+ or ∇– to select the label and press RETURN.

Each time you press Δ+ or ∇–, the label changes as shown below.

VIDEO 1
VIDEO 1 ⟷ S VIDEO ⟷ BETA ⟷ 8 mm ⟷ VHS ⟷ LD

VIDEO 2
VIDEO 2 ⟷ BETA ⟷ 8 mm ⟷ VHS ⟷ LD

VIDEO 3
VIDEO 3 ⟷ BETA ⟷ 8 mm ⟷ VHS ⟷ LD

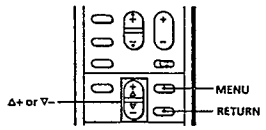
6 Repeat steps 4 and 5 to label other input modes.

Note
- If more than 90 seconds elapse after you press a button, the menu disappear automatically.

Displaying Caption Vision (CAPTION VISION)

■ *KV-27S10/27V10/32S10 only*

Some source programs provide with Caption Vision (Closed Caption). To display Caption Vision, select either CC1, CC2, TEXT1, or TEXT2 from the menu. CC1 or CC2 shows you a caption, that is a printed version of the dialog or sound effects of a program. (The mode should be set to CC1 for most programs.) TEXT1 or TEXT2 shows you text, that is information presented using half to full of the screen. It is not usually related to the program.



1 Press MENU.

2 Press Δ+ or ∇– to select CAPTION VISION and press RETURN.

3 Press Δ+ or ∇– to select the caption type and press RETURN.

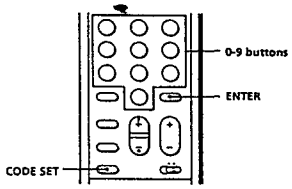
Note
- Captions may appear with a white box or another error instead of a certain word. Poor reception of TV programs can also cause errors in Caption Vision.

Operating video equipment

■ *KV-27V10/29V10C/29V10M only*

You can operate video equipment that has an infrared remote sensor with the supplied remote commander. For the operatings, set the manufacturer's code number.

Setting the manufacturer's code



While pressing CODE SET, press 0 – 9 to enter the manufacturer's code number (see the chart on the next page). For example, to operate a Sony 8 mm VCR, press 0, 2 and ENTER.

The code numbers for Sony equipment are assigned as follows:

01 ..... Beta, ED Beta VCR
02 ..... 8 mm VCR
03 ..... VHS VCR (Factory setting)
04 ..... MDP

● KV-27S15/29RS15/32S15

Step 1: Hookup

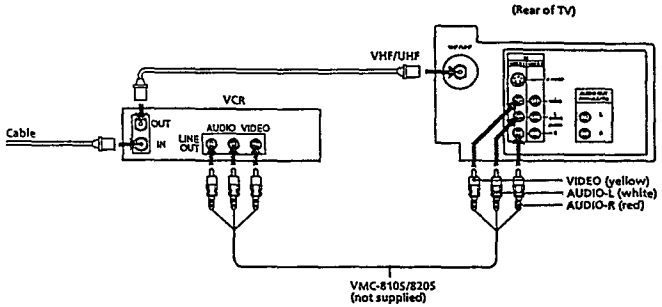
Connecting an antenna/cable TV system with a VCR

To connect your VCR to the TV, first check the model number of your TV and select the corresponding connection. For details on connection, see the instruction manual of your VCR. Before making connection, disconnect the AC power cords of the equipment to be connected.

After making these connections, you will be able to do the following:

- View the playback of video tapes
- Record one TV program while viewing another Program
- Watch two TV programs at once using a window Picture (Picture in Picture)

Without a cable box

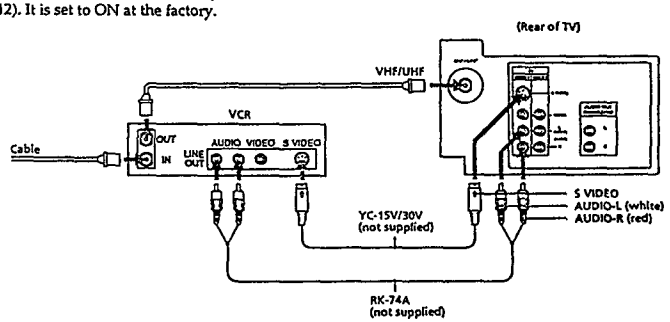


Note

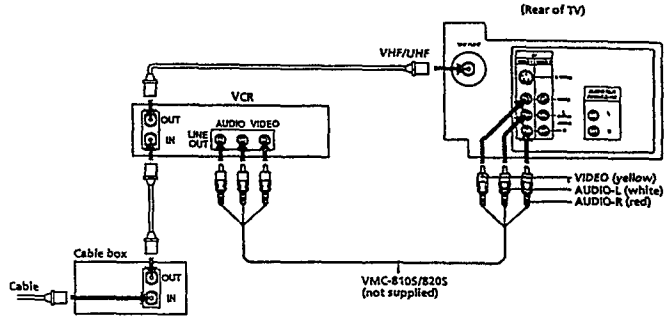
- To connect a monaural VCR, connect the audio output of the VCR to AUDIO-L (mono) of VIDEO 1 IN on the TV.

To an S video equipped VCR without a cable box

If your VCR has an S video output jack, hook up as follows and then set S VIDEO to ON on your TV(page12). It is set to ON at the factory.



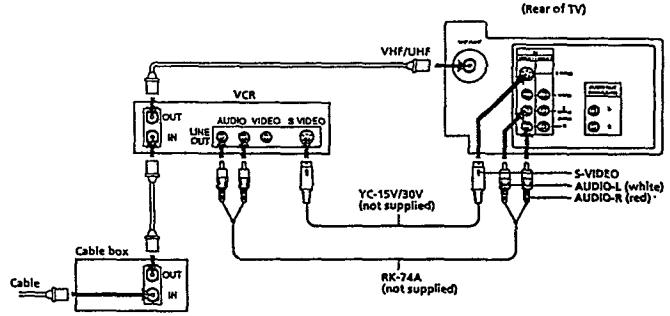
With a cable box



Note

- To connect a monaural VCR, connect the audio output of the VCR to AUDIO-L (mono) of VIDEO 1 IN on the TV.

To an S video equipped VCR with a cable box



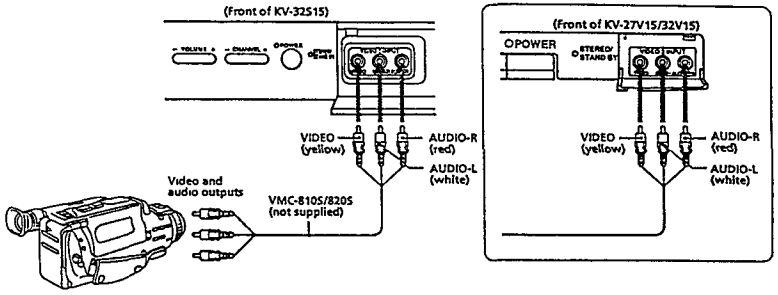
Note

- Video signals are composed of Y (luminance) and C (chroma) signals. The S connection sends the two signals separately preventing degradation, and gives better picture quality compared to conventional connection.

Connecting a camcorder

■ *KV-27V15/32S15/32V15 only*

This connection is convenient for viewing a camcorder.

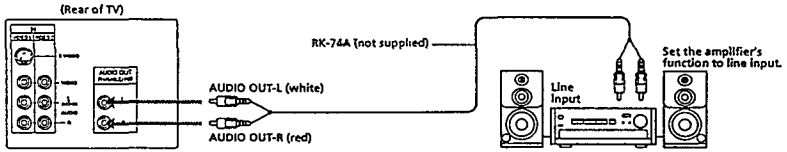


Note

- To connect a monaural camcorder, connect the audio output of the VCR to AUDIO-L (mono) of VIDEO 2 INPUT on the TV.

Connecting an audio system

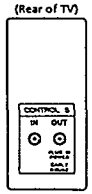
when connecting audio equipment, see page 20 for more information.



Connecting other Sony equipment with CONTROL S jack

■ *KV-27V15/32V15 only*

Connect the supplied cable box controller (Cable Mouse) to the CONTROL S OUT jack. Refer to the the Cable Mouse's manual for details on the connection.

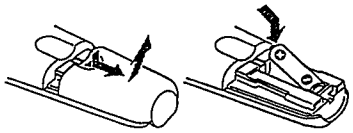


Make the following connections to control the TV and connected equipment with one remote commander.

- To control other Sony equipment with the TV's remote commander, connect the input of the equipment to CONTROL S OUT jack on the TV.
- To control the TV with the remote commander of other Sony equipment, connect the output of the equipment to CONTROL S IN jack on the TV.

Step 2: Setting up the remote commander

Insert one size AA (R6) battery (supplied) by matching the + and – on the battery to the diagram inside the battery compartment.



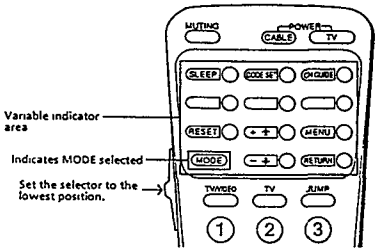
Notes

- With normal use, the battery should last for approximately six months.
- If you do not use the remote commander for an extended period of time, remove the battery to avoid possible damage from battery leakage.
- Do not handle the remote commander roughly. Do not drop it, step on it or let it get wet.
- Do not place the remote commander in direct sunlight, near a heater, or where the humidity is high.

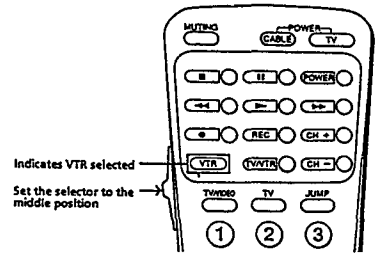
Using the remote commander

The upper half of the remote commander has three selectable operation modes. Each button in this area has three different functions. You can select the mode by sliding a selector on the left side.

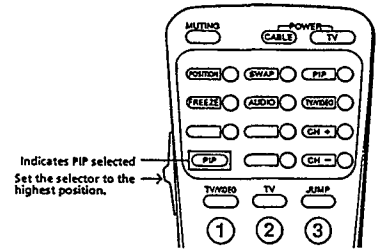
For normal TV viewing



For operating video equipment



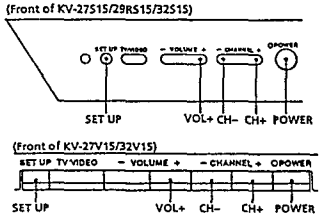
For using the Picture-in-Picture feature



Step 3: Setting up the TV automatically (AUTO SET UP)

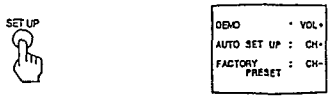
For cable box control (Cable Mouse) users (KV-27V15/32V15 only)
Refer to the supplied manual of Cable Mouse on how to set up your TV.

You can set up your TV easily by using AUTO SET UP feature. It presets all the receivable channels.
To set up the TV manually, see "Setting cable TV on or off" (page12) and "Presetting channels"(page12).
If the TV is set to a video input, you cannot execute AUTO SET UP. Press TV/VIDEO or TV so that a channel number appears.

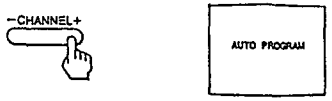

(Front of KV-27S15/29RS15/32S15)
SET UP
VOL+ CH- CH+ POWER
(Front of KV-27V15/32V15)
SET UP TV/VIDEO – VOLUME + – CHANNEL + OPOWER
SET UP
VOL+ CH- CH+ POWER

1 Press POWER to turn the TV on.

2 Press SET UP on the front of the TV.
The menu appears.



3 Press CH +.



"AUTO PROGRAM" appears on the screen and the TV starts scanning and presetting channels automatically. When all the receivable channels are stored, "AUTO PROGRAM" disappears and the lowest numbered channel is displayed. If the TV receives cable TV channels, CATV is set to ON automatically.

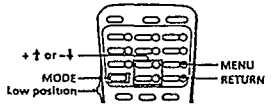
Note
- *If more than 90 seconds elapse after you press a button, the menu disappear automatically.*

DEMO:To browse the main functions,
Press VOL + in step 3. The functions and menus are displayed one by one.

FACTORY PRESET:To restore the factory settings when you are confused about the TV settings,
Press CH– in step 3. The settings of picture and sound are restored to the factory setting.

Erasing or adding channels

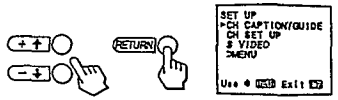
After AUTO SET UP you can erase unnecessary channels or add the channels you want. Preset channels during the day rather than late at night, when some channels may not be broadcasting.



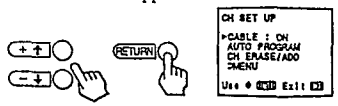
1 Press MENU.
The main menu appears.

(continued)

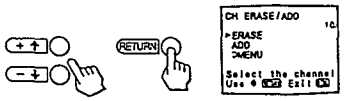
2 Press + or – to move the cursor (▶) to SET UP and press RETURN.
The SET UP menu appears.



3 Press + or – to move the cursor (▶) to CH SET UP and press RETURN.
The CH SET UP menu appears.



4 Press + or – to move the cursor (▶) to CH ERASE/ADD and press RETURN.
The CH ERASE/ADD menu appears.

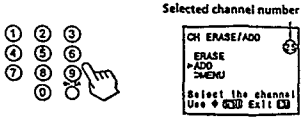


5 Erase and/or add the channel you want:

To erase an unwanted channel
(1) Make sure the cursor (▶) is beside ERASE.
(2) Press CH +/– to select the channel you want to erase and,

(3) press RETURN.
The indication "–" appears beside the channel number, showing that the channel is erased from the preset memory.

To add a channel that you want
(1) Press + or – to move the cursor (▶) to ADD.
(2) Press the 0 – 9 buttons to select the channel you want to add and press ENTER and,



(3) press RETURN.
The indication "+" appears beside the channel number, showing that the channel is added to the preset memory.

6 To erase and/or add other channels, repeat *step 5.*

7 When you finish, press MENU.

Note
- If you erase or add a VHF or UHF channel, the cable TV channel with the same number is also erased or added, and vice versa.

Setting cable TV on or off

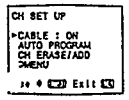
For cable box control (Cable Mouse) users (KV-27V15/32V15 only)
Refer to the supplied manual of Cable Mouse on how to set cable TV.

If you have connected the TV to a cable TV system, set CABLE to ON, the factory setting. If not, set CABLE to OFF.
You do not have to do this procedure if you execute AUTO SET UP (page 10). Do this procedure only when you want to set it manually.

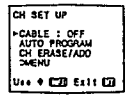
1 Press MENU.

2 Press + ↑ or – ↓ to move the cursor (▶) to SET UP and press RETURN.

3 Press + ↑ or – ↓ to move the cursor (▶) to CH SET UP and press RETURN.



4 Set CABLE to ON or OFF:
(1) Make sure the cursor (▶) is beside CABLE and press RETURN.
If the cursor is not beside CABLE, press + ↑ or – ↓ to move the cursor and press RETURN.
(2) Press + ↑ or – ↓ to select ON or OFF and, press RETURN.



5 Press MENU to return to the original screen.

Note
• If CH SET UP appears in black, the TV is set to a video input and you cannot select CABLE. Press TV/VIDEO or TV so that a channel number appears.

Presetting channels

For cable box control (Cable Mouse) users (KV-27V15/32V15 only)
Refer to the supplied manual of Cable Mouse on how to preset channels.

You can preset TV channels easily by AUTO PROGRAM feature.
You do not have to do this procedure if you execute AUTO SET UP (page 10). Do this procedure only when you want to set it manually.

1 Press MENU.

2 Press + ↑ or – ↓ to move the cursor (▶) to SET UP and press RETURN.

3 Press + ↑ or – ↓ to move the cursor (▶) to CH SET UP and press RETURN.

4 Press + ↑ or – ↓ to move the cursor (▶) to AUTO PROGRAM and press RETURN.

"AUTO PROGRAM" appears on the screen and the TV starts scanning and presetting channels automatically. When all the receivable channels are stored, "AUTO PROGRAM" disappears and the lowest numbered channel is displayed.

5 Press MENU to return to the original screen.

Note
• If the CH SET UP menu appears in black, the TV is set to a video input and you cannot select AUTO PROGRAM. Press TV/VIDEO or TV so that a channel number appears.

Setting S video on or off

You can change the S VIDEO menu to ON or OFF.

1 Press TV/VIDEO to select VIDEO 1.

2 Press MENU.

3 Press + ↑ or – ↓ to move the cursor (▶) to SET UP and press RETURN.

4 Press + ↑ or – ↓ to move the cursor (▶) to S VIDEO and press RETURN.

5 Press + ↑ or – ↓ to select ON or OFF and press RETURN.

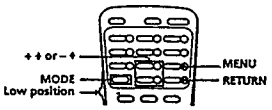
6 Press MENU to return to the original screen.

Notes
• If S VIDEO appears in black, set a video input to VIDEO 1.
• If you set S VIDEO to ON, the TV automatically receive S video signals whenever a VCR with S video is connected.

Changing the menu language

■ *KV-29RS15 only*

If you prefer Spanish to English, you can change the menu language.



1 Press MENU.
The main menu appears.

2 Press + ↑ or – ↓ to move the cursor (▶) to ENGLISH and press RETURN.

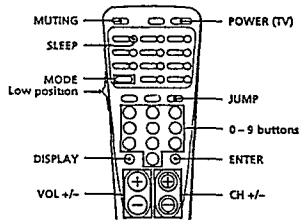
3 Press + ↑ or – ↓ to select ESPAÑOL and press RETURN.

4 Press MENU to return to the original screen.

Note
• Certain parts of the ESPAÑOL menus remain in English.

Watching the TV

For cable box control (Cable Mouse) users (KV-27V15/32V15 only)
Refer to the supplied manual of Cable Mouse on how to watch the TV using the cable box control.



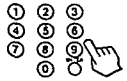
1 Press POWER (TV) to turn the TV on.

If "VIDEO" appears on the screen, press the TV/VIDEO or TV button so that a channel number appears.

2 *Select the channel you want:*

To select a channel directly

Press the 0 – 9 buttons and then press ENTER.



The channel can also be selected without pressing ENTER.

To scan through channels

Press CH +/– until the channel you want appears.

3 Press VOL +/– to adjust the volume.

Note
- Set the CABLE BOX/TV selector to TV.

Switching quickly between two channels

Press JUMP.

The channel you watched previously appears.

Pressing JUMP again switches back the channel.

Muting the sound

Press MUTING.

"MUTING" appears on the screen.

To restore the sound, press MUTING again, or press VOL +.

Displaying on-screen information

Use this feature to check the channel number, channel caption (if set), and MTS mode (if SAP is selected).

Press DISPLAY.

To cancel the display, press DISPLAY again.

Setting the Sleep Timer

The TV stays on for the length of time you specify and then shuts off automatically.

Press SLEEP repeatedly until the time (minutes) you want appears.

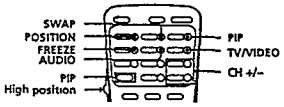
Each time you press SLEEP, the time changes as follows: 30 → 60 → 90 → OFF.

To cancel the Sleep Timer, press SLEEP repeatedly until "SLEEP OFF" appears, or turn the TV off.

Watching two programs at a time —PIP

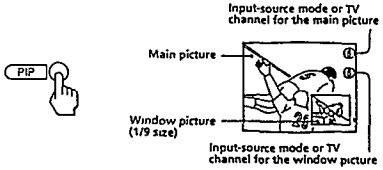
The Picture-in-Picture (PIP) feature allows you to watch both the main picture and a window picture simultaneously.

You can watch two TV channels at a time with this feature. See "Connecting an antenna/cable TV system with a VCR" (page 6) for connections.

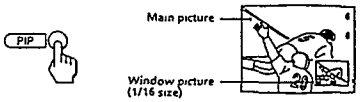


Displaying a window picture

Press PIP.


Input-source mode or TV channel for the main picture
Main picture
PIP
Window picture (1/9 size)
Input-source mode or TV channel for the window picture

Press PIP again to display a smaller window picture.



To remove the window picture, press PIP again.

Notes
- If the main picture is not receiving an image, the window picture may be in black and white.
- The window picture may be affected by the condition of the main picture.
- The window picture sound is also output from the VARIABLE/FIX AUDIO OUT jacks when you listen to it.

Changing the window picture input mode

Press TV/VIDEO in the PIP control area to select the input mode.

Each time you press TV/VIDEO, "TV", "VIDEO 1", "VIDEO 2" and "VIDEO 3 (*except for KV-27S15/29RS15*)" appear in sequence.

A window picture will appear in the same input mode as the last time you used PIP.

Listening to the sound of the window picture

Press AUDIO.

The ♪ display appears for a few seconds, indicating that the window picture sound is being received.

To restore the main picture sound, press AUDIO again.

Changing TV channels in the window picture

Press CH +/– in the PIP control area.

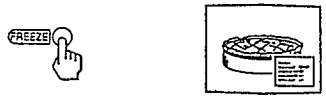
Changing the position of the window picture

Press POSITION.
Each time you press POSITION, the window picture will move counterclockwise on the screen.

Freezing the window picture

This feature is useful when you want to write down a recipe from a cooking program, a displayed address or a phone number and so on.

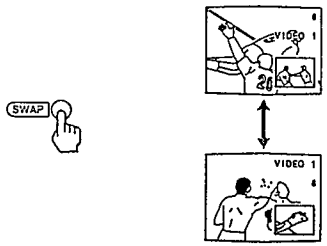
Press FREEZE.



To restore the normal screen, press FREEZE again.

Swapping the main and window pictures

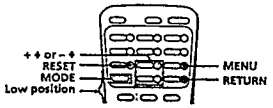
Press SWAP.
Each time you press SWAP, the images from the main and window pictures switch places along with the sound.



Note
- The channels being received through the AUX jack cannot be displayed as a window picture (*KV-32V15 only*).

Adjusting the picture (VIDEO)

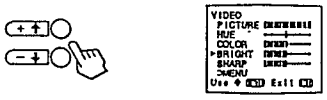
When watching TV programs, you can adjust the quality of the picture to suit your taste.
You can adjust the picture of video input(s) as well. These settings are stored separately from those for the TV picture.



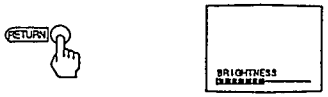
1 Press MENU.

2 Make sure the cursor (▶) is beside VIDEO and press RETURN.

3 Select the item you want to adjust.
For example:
(1) To adjust brightness, press + + or – + to select BRIGHT and,

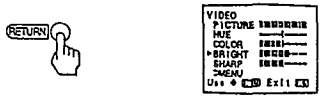


(2) press RETURN.



4 Adjust the selected item:
(1) Press + + or – + to adjust the item and,

(2) press RETURN.
The new setting appears in the VIDEO menu.



For details on each item, see "Description of adjustable items" below.

5 To adjust other items, repeat steps 3 and 4.

Description of adjustable items

Item	Press + + to	Press – + to
PICTURE	Increase picture contrast and give vivid color	Decrease picture contrast and give soft color
HUE	Make skin tones become greenish	Make skin tones become purplish
COLOR	Increase color intensity	Decrease color intensity
BRIGHT	Brighten the picture	Darken the picture
SHARP	Sharpen the picture	Soften the picture

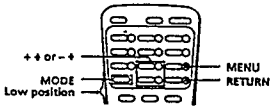
To restore the factory settings

Press RESET while the VIDEO menu is displayed.
All the settings are restored to the factory settings.

Adjusting screen brightness automatically (LUMISPONDER)

■ *KV-27V15/32V15 only*

The LUMISPONDER feature adjusts the brightness of the screen automatically according to the ambient brightness. The LUMISPONDER function automatically adjusts the level set by the user in the VIDEO menu to the standard.



1 Press MENU.

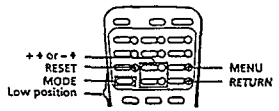
2 Press + + or – + to select VIDEO and press RETURN.

3 Press + + or – + to select LUMISPONDER and press RETURN.

4 Press + + or – + to select ON or OFF and press RETURN.

Adjusting the sound (AUDIO)

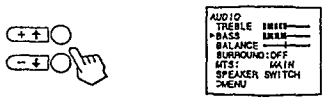
You can adjust the quality of the TV sound to suit your taste.
You can adjust the sound of video input(s) as well. These settings are stored separately from those for the TV sound.



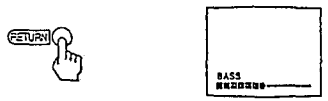
1 Press MENU.

2 Press + + or – + to select AUDIO and press RETURN.

3 Select the item you want to adjust.
For example:
(1) To adjust bass, press + + or – + to select BASS and,



(2) press RETURN.



4 Adjust the selected item:
(1) Press + + or – + to adjust the item and,

(2) press RETURN.
The new setting appears in the AUDIO menu.

For details on each item, see "Description of adjustable items" below.

5 To adjust other items, repeat steps 3 and 4 above.

Description of adjustable items

Item	Press + + to	Press – + to
TREBLE	Increase the treble response	Decrease the treble response
BASS	Increase the bass response	Decrease the bass response
BALANCE	Emphasize the right speaker's volume	Emphasize the left speaker's volume

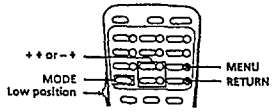
To restore the factory settings

Press RESET while the AUDIO menu is displayed.

Note
- When SPEAKER (page 20) is OFF and AUDIO OUT (page 20) is FIXED condition, the sound is set to mid-level and it cannot be adjusted.

Listening to surround sound (SURROUND)

SURROUND feature simulates sound reproduction with the atmosphere of a movie theater or a concert hall. Surround sound is only effective for stereo programs.



1 Press MENU.

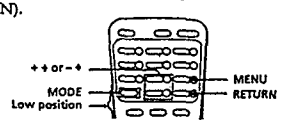
2 Press + + or – + to select AUDIO and press RETURN.

3 Press + + or – + to select SURROUND and press RETURN.

4 Press + + or – + to select ON and press RETURN.

Selecting stereo or bilingual programs (MTS)

The Multichannel TV Sound (MTS) feature allows you to enjoy stereo sound or Second Audio Programs (SAP) at your choice. The initial setting is stereo sound (MAIN).



1 Press MENU.

2 Press + + or – + to select AUDIO and press RETURN.

3 Press + + or – + to select MTS and press RETURN.

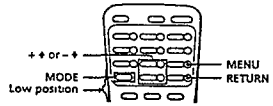
4 Press + + or – + to select MAIN, SAP, or MONO and press RETURN.

Choose	To
MAIN	Listen to stereo sound. The STEREO indicator on the TV lights up while a stereo broadcast is received.
SAP	Listen to bilingual programs. The sound of non-SAP programs will be muted when SAP is selected.
MONO	Reduce noise during stereo broadcasts.

Note
- Stereo and SAP sounds are subject to program sources.

Setting the speaker switch (SPEAKER)

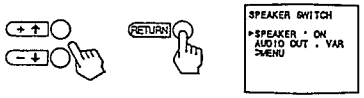
You may switch off the TV speakers when, for example, you want to listen to the sound through a stereo system.



1 Press MENU.

2 Press + + or – + to select AUDIO and press RETURN.

3 Press + + or – + to select SPEAKER SWITCH and press RETURN.

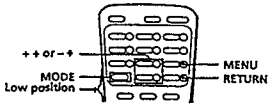


4 Make sure the cursor (▸) is beside SPEAKER and press RETURN.

5 Press + + or – + to select ON or OFF and press RETURN.

Setting audio out (AUDIO OUT)

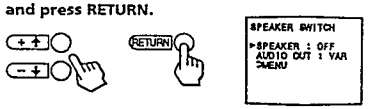
You can select audio out to variable or fixed when SPEAKER is set to OFF.
Audio out is variable when SPEAKER is set to ON.



1 Press MENU.

2 Press + + or – + to select AUDIO and press RETURN.

3 Press + + or – + to select SPEAKER SWITCH and press RETURN.



4 Press + + or – + to select AUDIO OUT and press RETURN.

5 Press + + or – + to select VAR or FIXED and press RETURN.

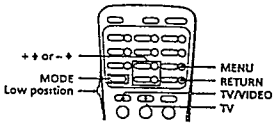
VAR: Sound output varied according to the TV settings. You can adjust the volume, bass, treble and balance.
FIXED: Sound output is always fixed to a certain level. You cannot adjust the volume.

Customizing the channel number buttons (CH CAPTION/GUIDE)

For cable box control (Cable Mouse) users (KV-27V15/32V15 only)
Make the setting of Cable Mouse before customizing the channel number buttons.

You can choose up to 12 channels, caption each channel, and assign a specific channel number button to each channel. This feature allows you to select your favorite channels easily by name. For example, you can name channel 20 "ESPN," and assign the channel number 4 button to it.

Setting captions to favorite channels



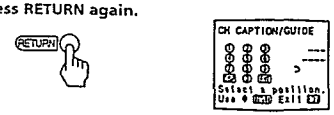
1 Press TV/VIDEO or TV to select TV mode.

2 Press MENU.

3 Press + + or – + to select SET UP and press RETURN.

4 Press + + or – + to select CH CAPTION/GUIDE and press RETURN.

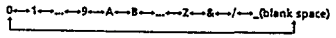
5 Press RETURN again.

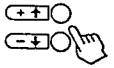


6 Press + + or – + to select a channel guide number button and press RETURN.
Each time you press + + or – +, the channel positions change to red in turns. The channel number button you select will be the one you press to call up your favorite channel.

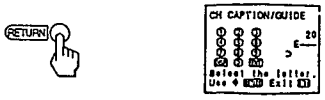
7 Press + + or – + to select the channel that you want to caption and press RETURN.

8 Enter the letters (up to four) to caption the channel:
(1) Press + + or – + to select the first letter.
Each time you press + + or – +, the letter changes as shown below and,





(2) press RETURN.



(3) Repeat steps (1) and (2) to select the remaining letters and press RETURN.

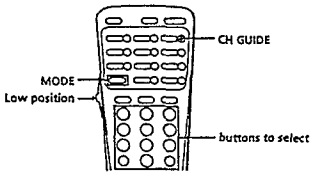
(continued)

9 Repeat step 5 to 7 to caption other channels.

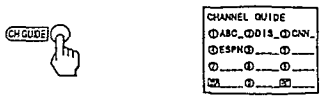
To erase a caption
Press RESET after step 5.

NOTE
- The position number you already selected appears in yellow.
- If the CH CAPTION/GUIDE menu appears in black, the TV is set to a video input and you cannot select CH CAPTION/GUIDE.
- If more than 90 seconds elapse after you press a button, the menu disappears automatically.

Selecting a captioned channel



1 *Press CH GUIDE.*
The CHANNEL GUIDE menu appears showing channel captions and the corresponding channel number buttons.



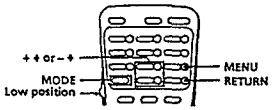
2 Press a channel number button, the DISP or ENT button to select the channel you want.

To cancel the CHANNEL GUIDE menu
Press CH GUIDE again.

Setting video labels (VIDEO LABEL)

■ *KV-27V15/32S15/32V15 only*

This feature allows you to label each input mode so that you can easily identify the connected equipment. For example, you can label *VIDEO 1 IN* as *VHS*.



1 Press MENU.

2 Press + + or – + to select SET UP and press RETURN.

3 Press + + or – + to select VIDEO LABEL and press RETURN.

4 *Press + + or – + to select the input mode* you want to label and press RETURN.

5 Press + + or – + to select the label and press RETURN.

Each time you press + + or – +, the label changes as shown below.

VIDEO 1
VIDEO 1 ⟷ S VIDEO ⟷ BETA ⟷ 8 mm ⟷ VHS ⟷ LD

VIDEO 2
VIDEO 2 ⟷ BETA ⟷ 8 mm ⟷ VHS ⟷ LD

VIDEO 3
VIDEO 3 ⟷ BETA ⟷ 8 mm ⟷ VHS ⟷ LD

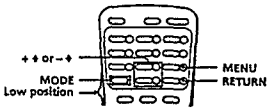
6 Repeat steps 4 and 5 to label other input modes.

Note
- If more than 90 seconds elapse after you press a button, the menu disappears automatically.

Displaying Caption Vision (CAPTION VISION)

■ *KV-27S15/27V15/32S15/32V15 only*

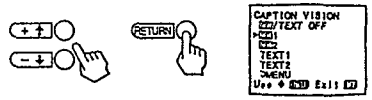
Some source programs provide with Caption Vision (Closed Caption). To display Caption Vision, select either *CC1, CC2, TEXT1, or TEXT2 from the menu.* CC1 or CC2 shows you a caption, that is a printed version of the dialog or sound effects of a program. *(The mode should be set to CC1 for most programs.)* TEXT1 or TEXT2 shows you text, that is information presented using half to full of the screen. It is not usually related to the program.



1 Press MENU.

2 Press + + or – + to select CAPTION VISION and press RETURN.

3 Press + + or – + to select the caption type and press RETURN.

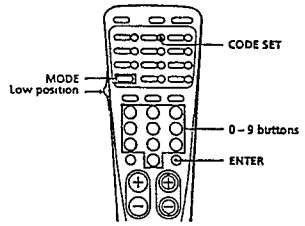


Note
- Captions may appear with a white box or another error instead of a certain word. *Poor reception of TV programs can* also cause errors in Caption Vision.

Operating video equipment

You can operate video equipment that has an infrared remote sensor with the supplied remote commander. For the operations, set the manufacturer's code number.

Setting the manufacturer's code



While pressing CODE SET, press 0 – 9 to enter the manufacturer's code number (see the chart in the right column). For example, to operate a Sony 8 mm VCR, press 0, 2 and ENTER.

The code numbers for Sony equipment are assigned as follows:

01 Beta, ED Beta VCR
02 8 mm VCR
03 VHS VCR (Fadtory preset of Remote Commander.)

VCR Manufacturer Code numbers

Manufacturer	Code number
SONY	01, 02, 03
CANON	05
EMERSON	22, 30, 33
FISHER	10, 11, 12, 15
FUNAI	29
GENERAL ELECTRIC	05, 08
GOLDSTAR	25
HITACHI	07, 08, 36
JVC	16, 35
MAGNAVOX	05, 06, 09
MITSUBISHI	18, 19, 26, 27
MULTITECH	29
NEC	16, 23, 31
PANASONIC	05, 06
PHILCO	05, 06
PHILIPS	05, 06, 09
QUASAR	05, 06
RCA	07, 08
SAMSUNG	24, 32
SANYO	11, 15
SCOTT	21
SHARP	13, 14
SHINTOM	34
SYLVANIA	05, 06, 09
SYMPHONIC	29
TEKNIKA	28, 29
TOSHIBA	20, 21
TOTE VISION	25
ZENITH	17

MDP manufacturer code numbers

Manufacturer	Code number
SONY	04
KENWOOD	58
MAGNAVOX	52
MARANZ	54
MITSUBISHI	51
PANASONIC	55
PHILIPS	52
PIONEER	51
RCA	51
SANYO	57
SHARP	56
YAMAHA	53

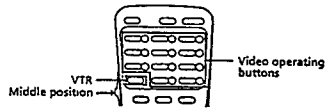
Notes

- If more than one code number is listed, try entering them one by one, until you come to the correct code for your equipment.
- In some rare cases, you may not be able to operate your non-Sony video equipment with this remote commander. This is because your equipment may use a code that is not provided with this remote commander. In this case, please use the equipment's own remote control unit.

Caution

When you remove a battery from the remote commander, the code may revert to 03. Reset the code each time you replace the battery, if necessary.

Operating video equipment



Use the video operating buttons on the remote commander to operate the video equipment.

Operating a VCR	Buttons on the remote commander
To turn on or off	Press POWER
To change channels	Press CH +/–
To record	Press ● and REC simultaneously
To play	Press ▶
To stop	Press ■
To fast forward	Press ▶▶
To rewind the tape	Press ◀◀
To pause	Press II
To search the picture forward and backward	Press ▶▶ or ◀◀ during playback

Operating the laser-disc player	Buttons on the remote commander
To play	Press ▶
To stop	Press ■
To pause	Press II To resume normal playback, press again.
To search the picture forward and backward	Keep pressing ▶▶ or ◀◀ during playback To resume normal playback, release the button.
To search the chapter	Press CH +/–

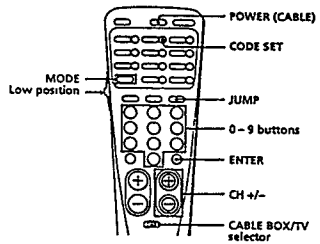
Note

- If the video equipment does not have a certain function, the corresponding button on this remote commander will not operate.

Operating a cable box

For cable box control (Cable Mouse) users (KV-27V15/32V15 only)
Set the CABLE BOX/TV selector to TV.

Follow these instructions to set the manufacturer's code which will enable you to operate a connected cable box with the pre-programmed remote commander. For example, you can set the remote commander to operate a connected Zenith cable box.

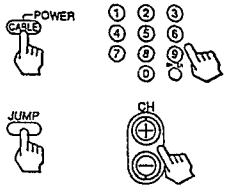


1 Set the CABLE BOX/TV selector to CABLE BOX.

2 While pressing CODE SET, press 6 and 8 (Zenith's code number —see chart on the next page) and ENTER.

(continued)

3 Use POWER(CABLE) and the TV control buttons (0 – 9, ENTER, JUMP and CH +/–) to operate the cable box.



To operate the TV

Set the CABLE BOX/TV selector to TV. Then use the TV control buttons to control the TV.

For more details on operating the cable box

Refer to the operating instructions that come with the cable box.

Manufactures and code numbers (cable box)

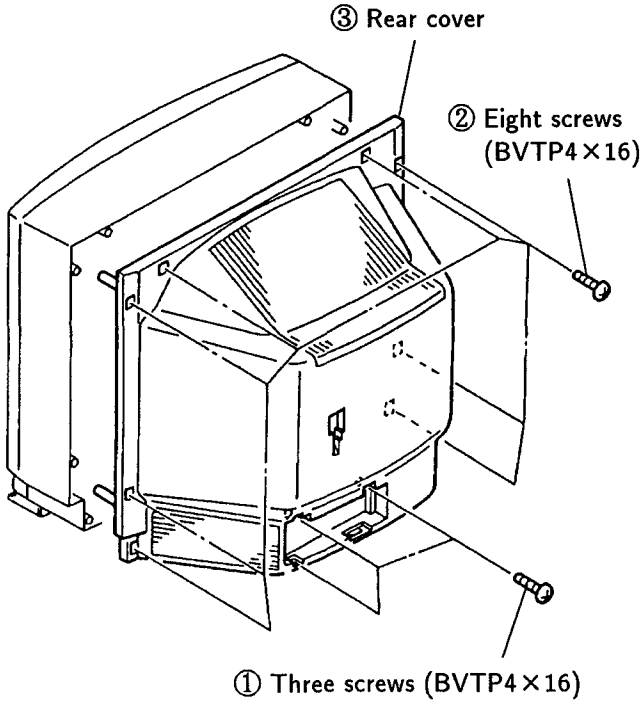
Manufacturer	Code number
JERROLD	60, 61, 62, 63, 64, 65, 73
PIONEER	69, 70
SCIENTIFIC ATLANTA	66, 67
TOCOM	71, 72
ZENITH	68

Notes

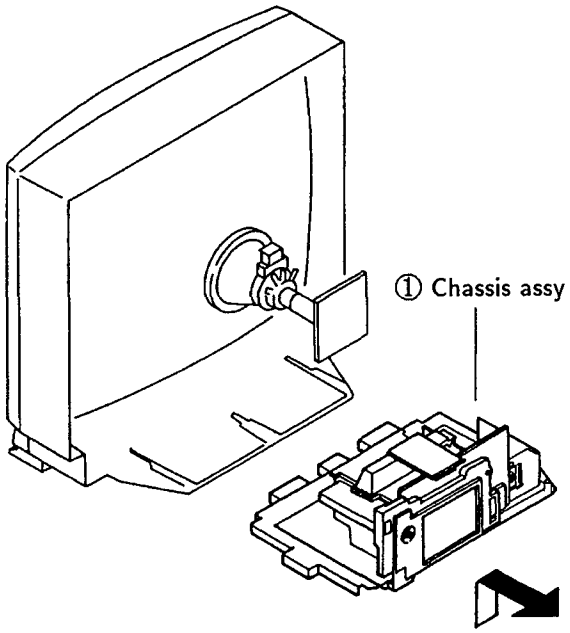
- If more than one code number is listed, try entering them one by one until you come to the correct code for your equipment.
- If you enter a new code number, the code number you previously entered at that setting is erased.
- In some cases, your equipment may use a code that is not provided with this remote commander and you may not be able to operate your cable box with the supplied remote commander. In this case, use the equipment's own remote control unit.
- When you remove a battery from the remote commander, the code may be erased. Reset the code each time you replace the battery, if necessary.

SECTION 2
DISASSEMBLY

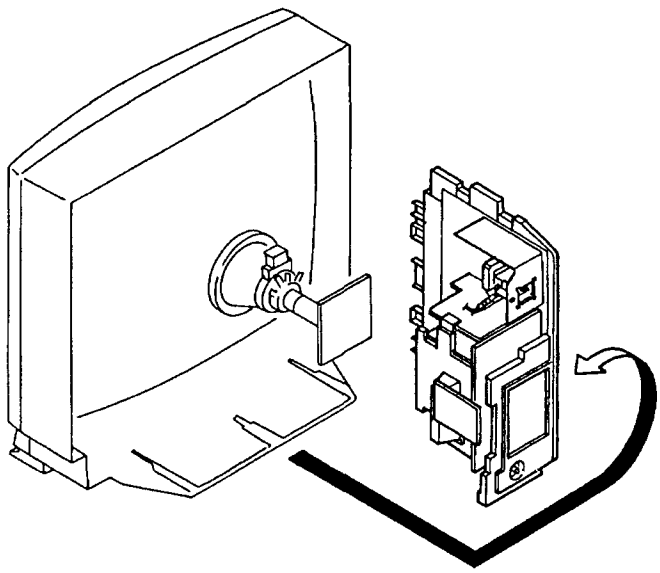
2-1. REAR COVER REMOVAL



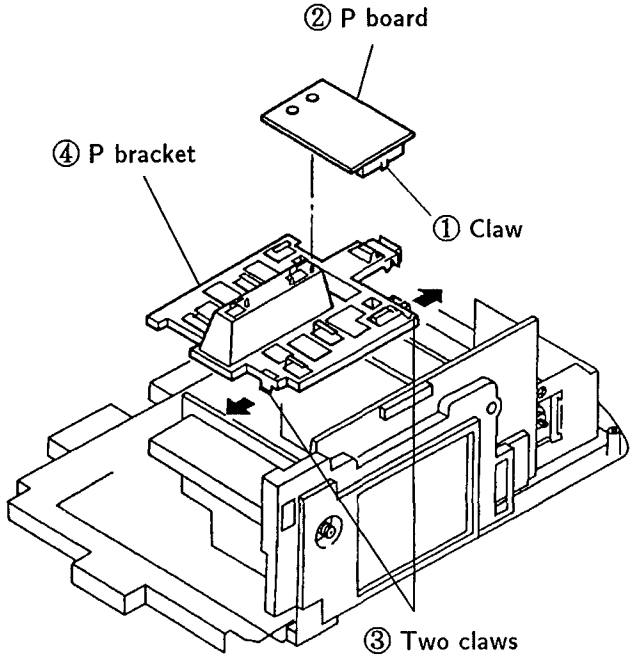
2-2. CHASSIS ASSY REMOVAL



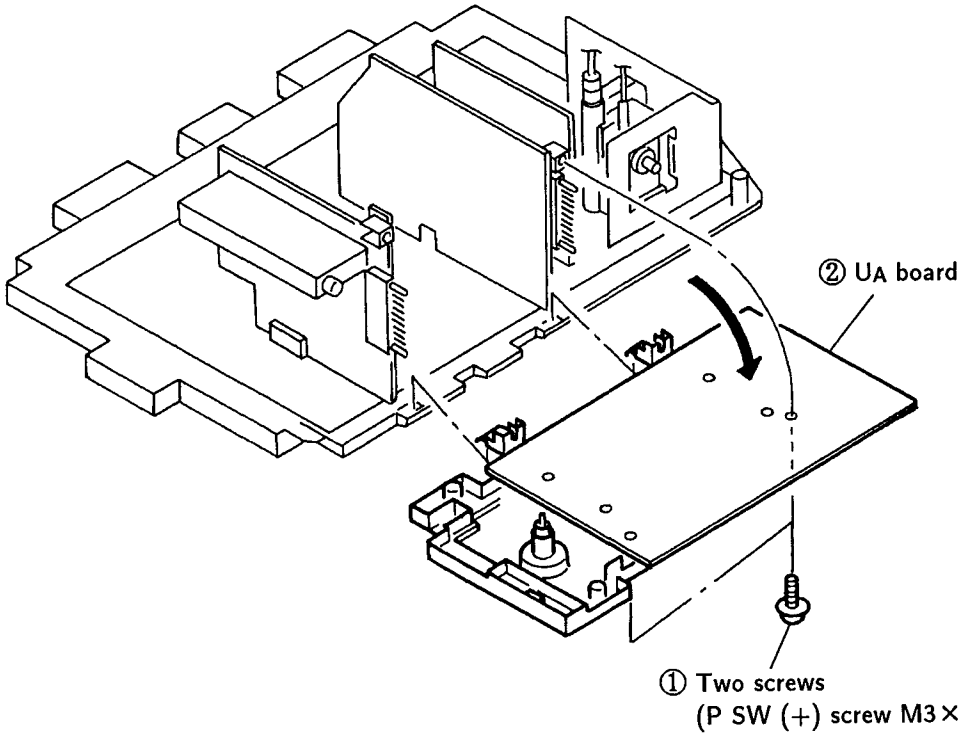
2-3. SERVICE POSITION



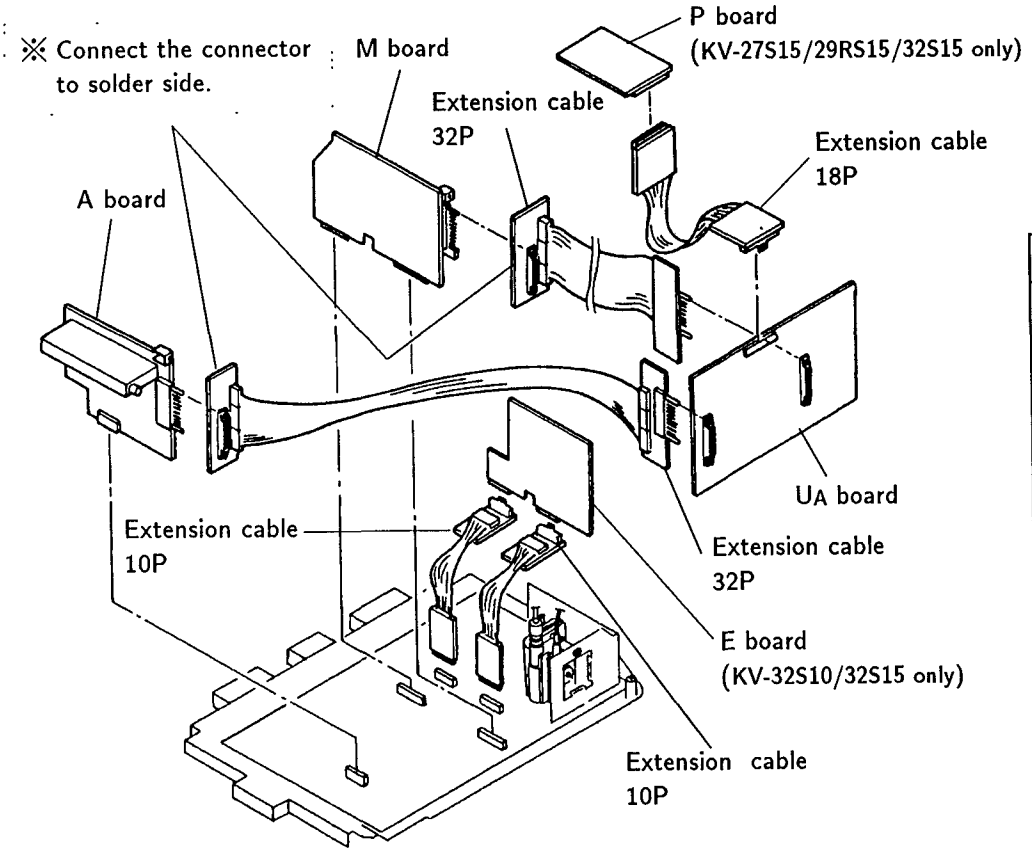
2-4. P BOARD AND P BRACKET REMOVAL (KV-27S15/29RS15/32S15 only)

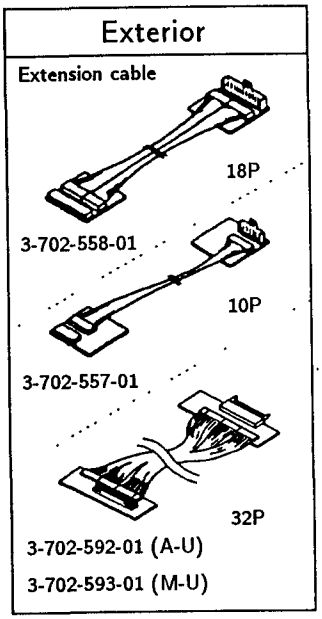


2-5. UA BOARD REMOVAL

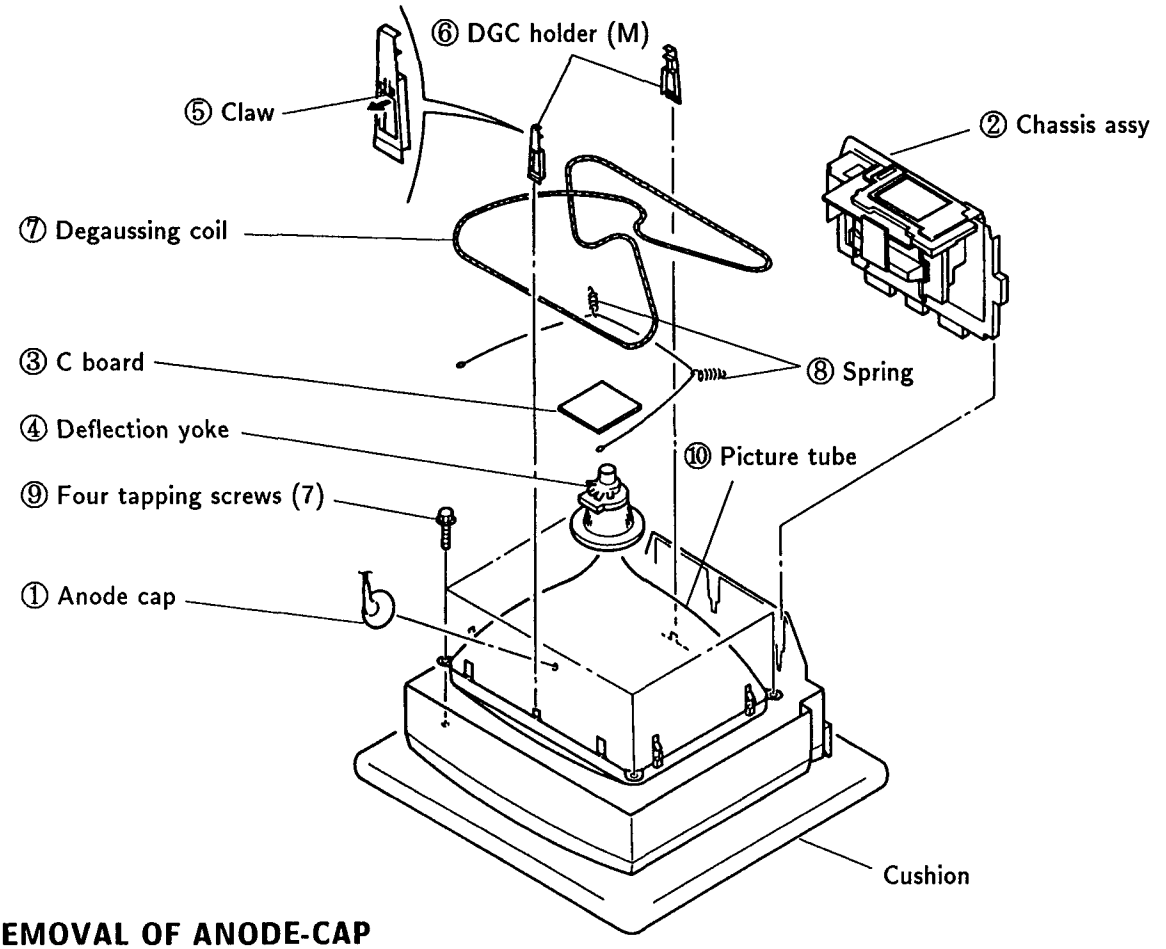


2-6. EXTENSION CABLE





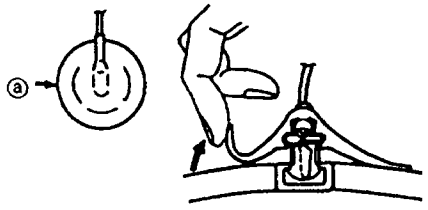
2-7. PICTURE TUBE REMOVAL (1)
(KV-27S10/27S15/29RS10/29RS15 only)



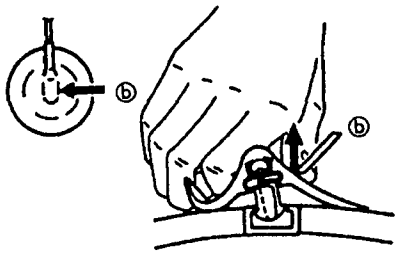
• REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

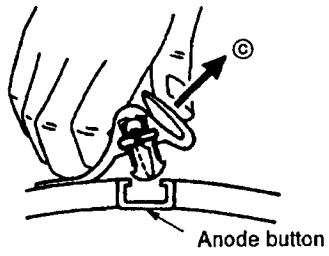
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



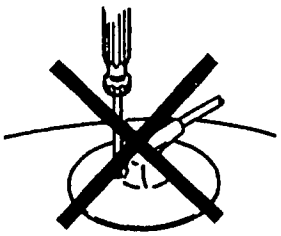
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

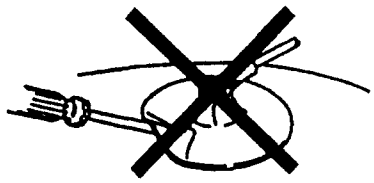
• HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

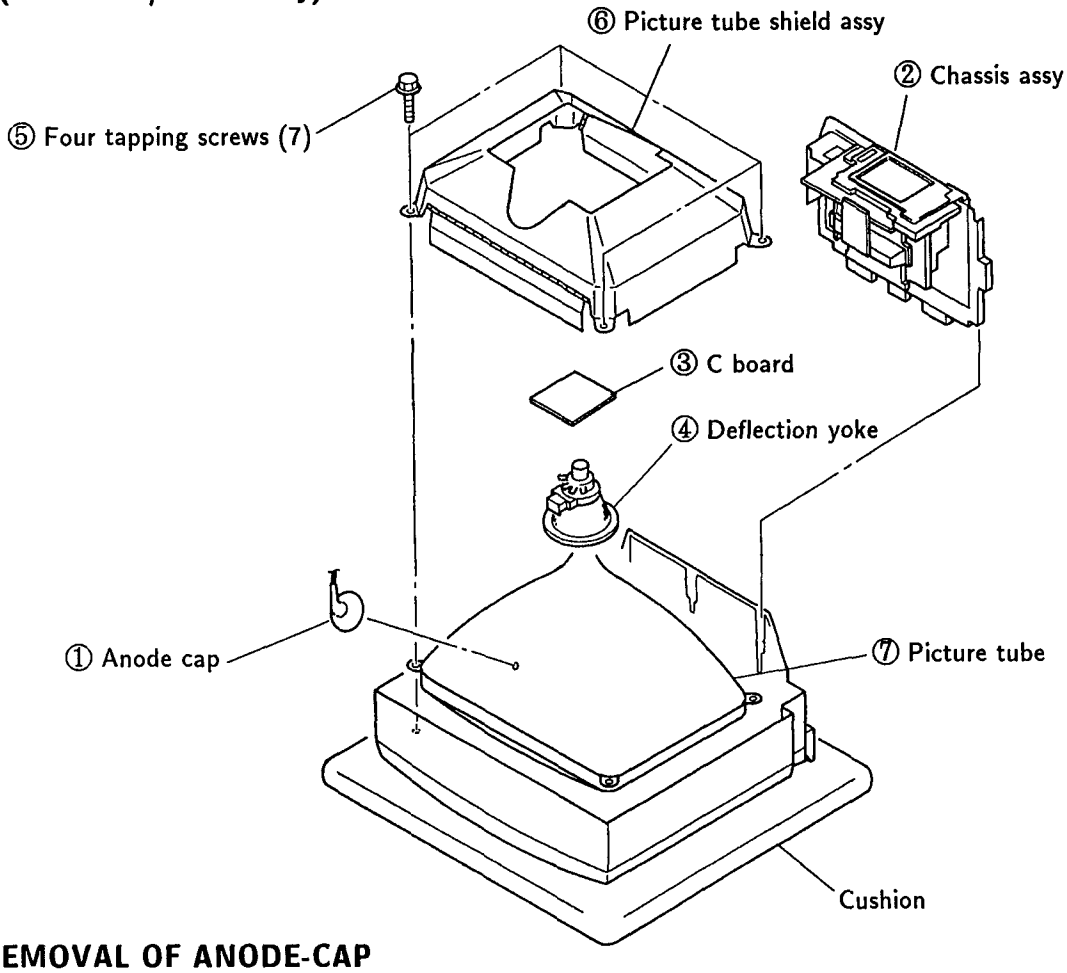
② Don't press the rubber hardly not to hurt inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hardly!
The shatter-hook terminal will stick out or hurt the rubber.





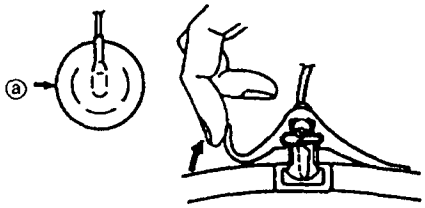
2-7. PICTURE TUBE REMOVAL (2)
(KV-32S10/32S15 only)



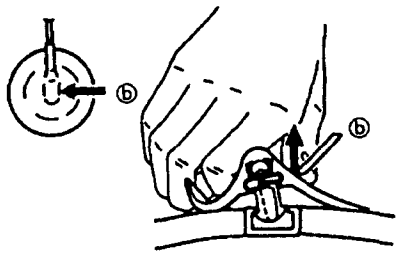
• REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

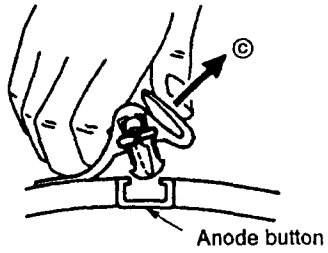
• REMOVING PROCEDURES



① *Turn up one side of the rubber cap in the* direction indicated by the arrow ⓐ.



② *Using a thumb pull up the rubber cap* firmly in the direction indicated by the arrow ⓑ.



③ *When one side of the rubber cap is* separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

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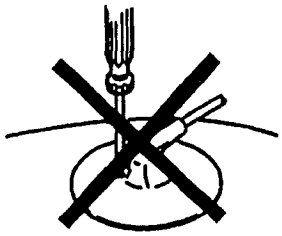
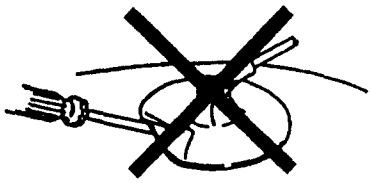




SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted :

PICTURE control . . . . . RESET
BRIGHTNESS control . . . . . center

Preparations :

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input the white signal with the pattern generator.
   Contrast
   Bightness } normal
2. Set the pattern generator raster signal to green.
3. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side.
   (See Figures 3-1 through 3-3.)
4. Move the deflection yoke forward and adjust so that entire screen is green. (See Figure 3-1.)
5. Switch the raster signal to blue, then to red and verify the condition.
6. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
7. If the beam does not land correctly in all the corners, use a magnet to adjust it.
   (See Figure 3-4.)

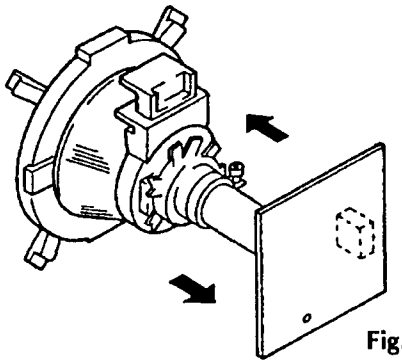


Fig.3-1

Perform the adjustments in order as follows :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

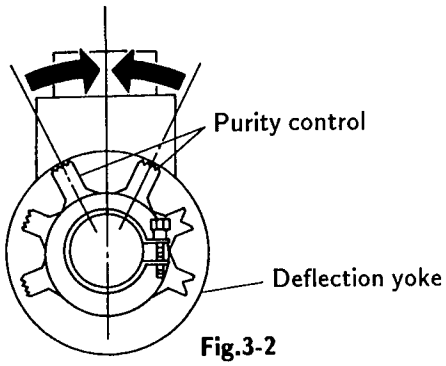


Fig.3-2

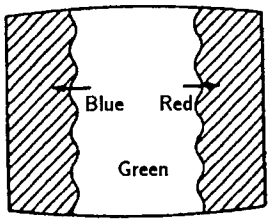


Fig.3-3

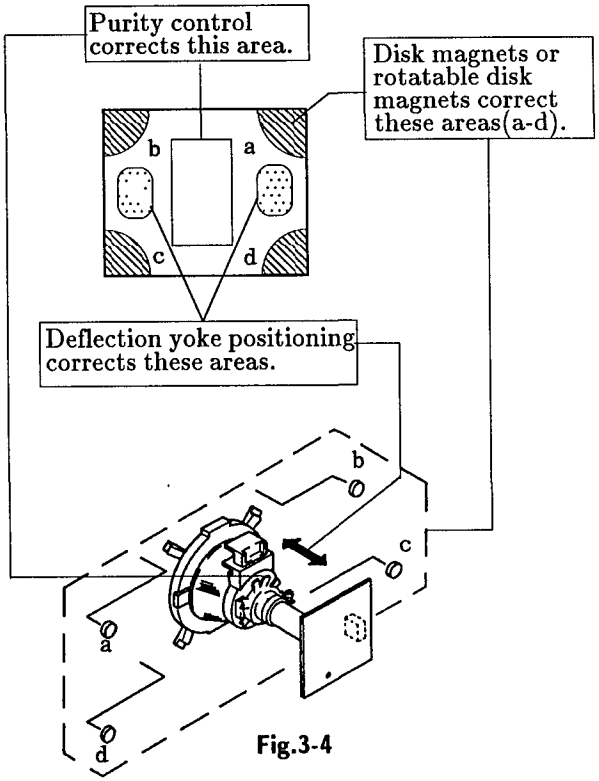


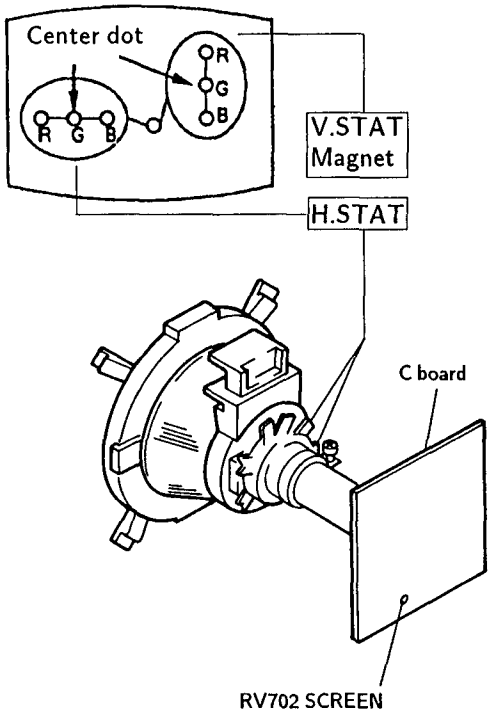
Fig.3-4

3-2. CONVERGENCE

Preparation :

- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

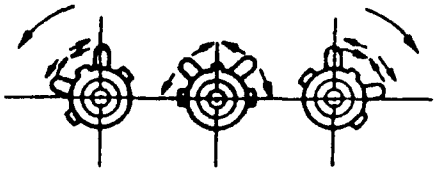
(1) **Horizontal and Vertical Static Convergence**



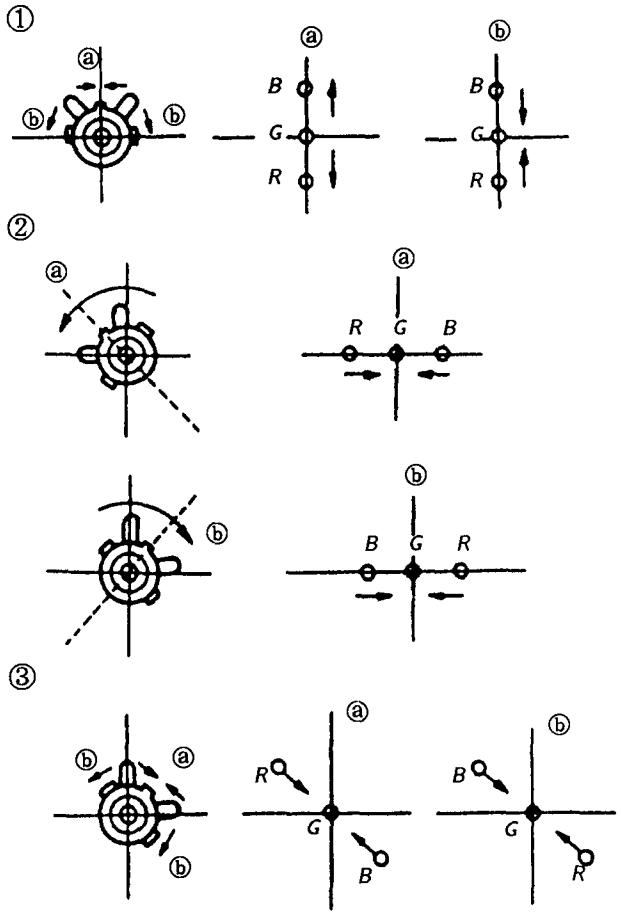
1. V. STAT Adjustment
   Turn the V. STAT tabs to left or right so that the vertical red, green and blue dots converge in the center of the screen.
2. H. STAT Adjustment
   Simultaneously turn the 2 V. STAT tabs in the same direction so that the horizontal red, green and blue dots converge in the center of the screen.

Note : Do not move the purity tab during adjustment with the V. STAT tab. If the purity tab is moved, the convergence condition will change, and possibly lead to misadjustment of a different yoke.

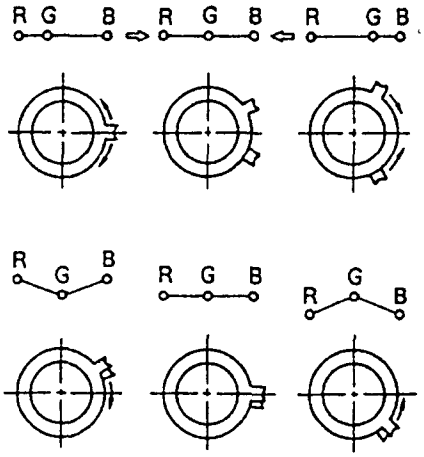
- Tilt the V.STAT tabs and adjust the static convergence by turning the V.STAT tabs to the left or right.

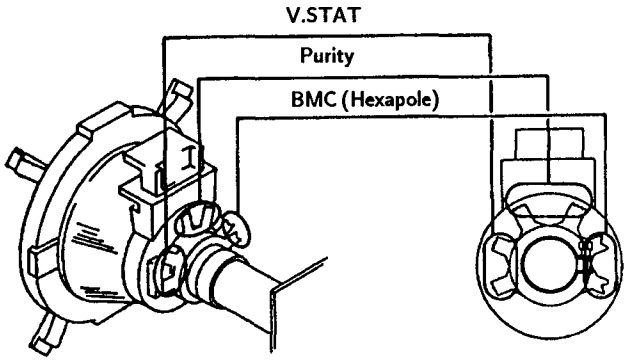


4. The V.STAT tabs are moved in the direction of the ⓐ and ⓑ arrows and the red, green and blue points move as shown below.



- Operation of BMC (Hexapole) Magnet





- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
  Use the V.STAT tabs to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

(2) **Dynamic Convergence Adjustment**

Preparations :

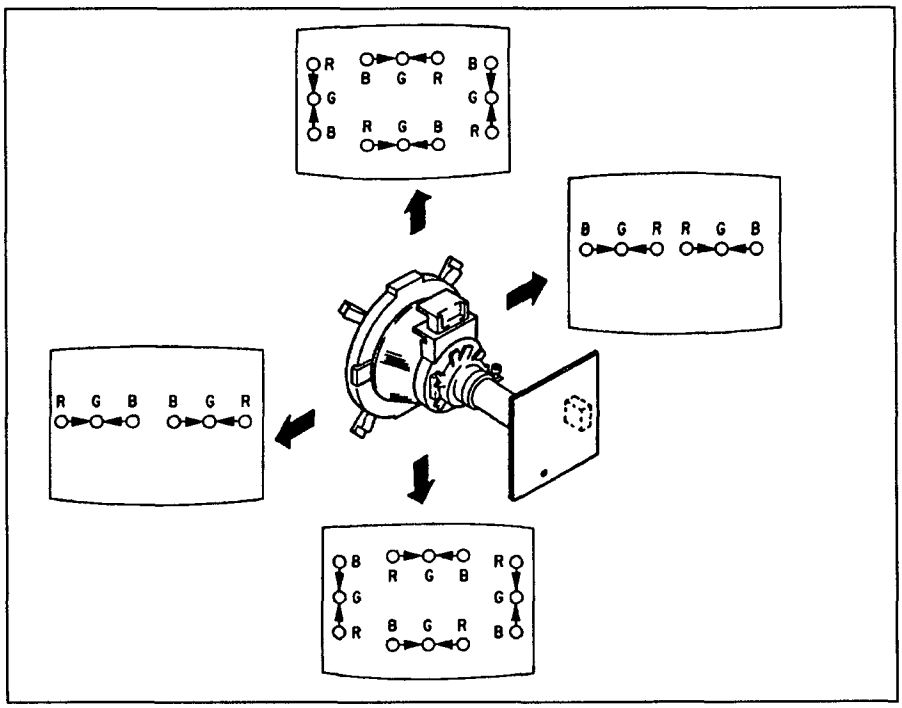
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.

• Y separation axis correction magnet adjustment

1. Receive the cross-hatch signal, and adjust [PIX] to "MIN" and [BRT] to "standard".
2. Adjust the deflection yoke to the upright condition when it hits the CRT.
3. Adjust so that the Y separation axis correction magnet on the neck assembly is symmetrical at the top and bottom (open state).
4. Return the deflection yoke to its original position.

3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the defelection yoke spacer.

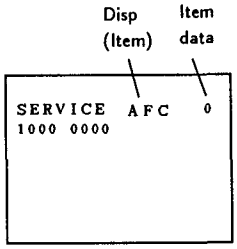


(3) Dynamic Convergence Circuit Adjustment

SERVICE MODE PROCEDURE

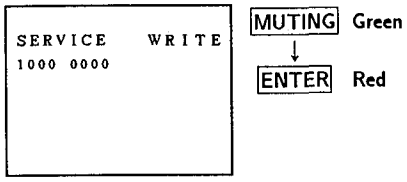
1. Standby mode.(Power off)
2. DISPLAY → 5 → VOL (+) → POWER on the Remote Commander. (Press each button within a second.)

SERVICE ADJUSTMENT MODE IN

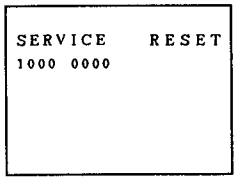


3. The CRT displays the item Being adjusted.
4. Press 1 or 4 on the Remote Commander to select the item.
5. Press 3 or 6 on the Remote Commander to change the data.
6. Press MUTING then ENTER to write into memory.

SERVICE ADJUSTMENT MODE MEMORY



7. Press 8 then ENTER on the Remote Commander to initlalize.



Factory original setting

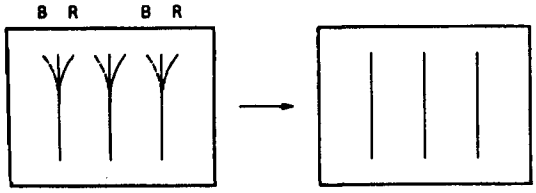
8. Turn set off and on to exit.

- Set to Service Mode.
- Input a cross-hatch signal.
- Press 1 and 4 serect an item of adjustments.
- Adjust 3 and 6 to the best picture.

No.	Disp.	Item	Ave.Data
40	UYBO	Upper Y-Bow	31
41	LYBO	Lower Y-Bow	25
42	HAMP	H. Amp	33
43	HTIL	H. Tilt	33
44	UCBO	Upper C-Bow	38
45	UTIL	Upper Tilt	40
46	LCBO	Lower C-Bow	41
47	LTIL	Lower Tilt	46
48	DCSH	DC Shift	37

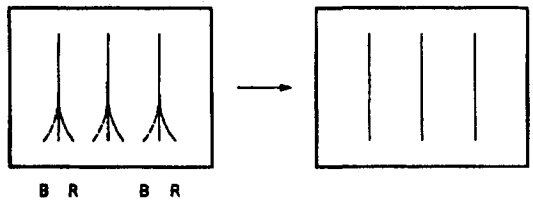
U. YBOW

Select UYBO with 1 and 4



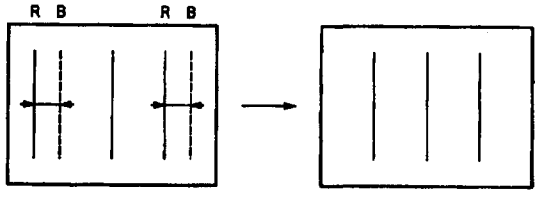
L. YBOW

Select LYBO with 1 and 4



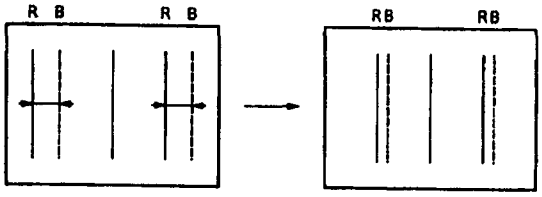
H. AMP

Select HAMP with 1 and 4



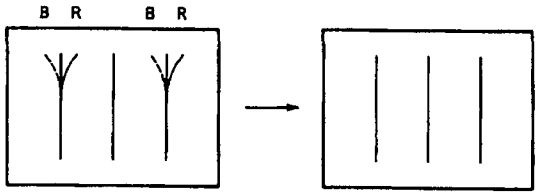
H. TILT

Select HTILT with [1] and [4]



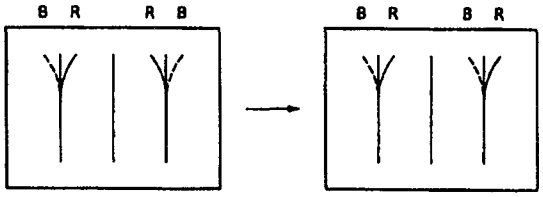
U. CBOW

Select UCBO with [1] and [4]



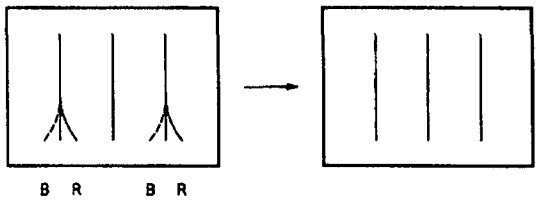
U. TILT

Select UTIL with [1] and [4]



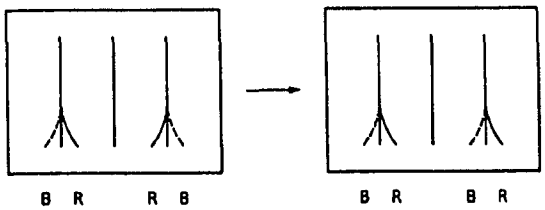
L. CBOW

Select LCBO with [1] and [4]

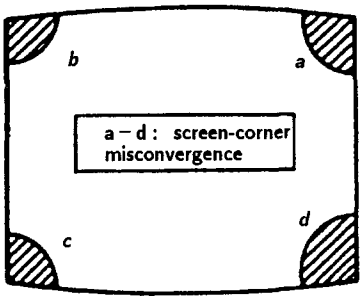


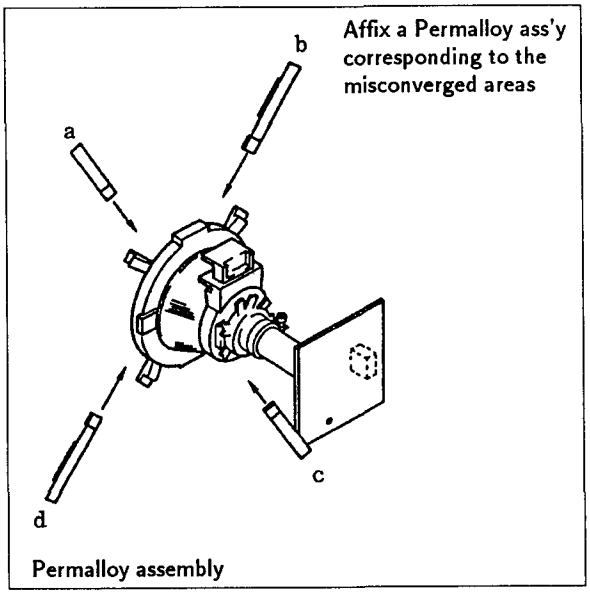
L. TILT

Select L. TIL with [1] and [4]



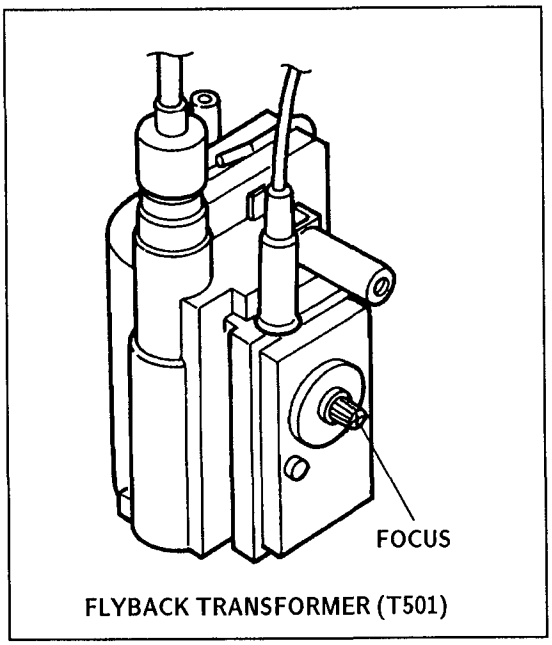
(4) Screen-corner Convergence





3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for a best focus.



3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G 2 (SCREEN) ADJUSTMENT(RV 702)

1. Set the PICTURE and BRIGHTNESS to normal.
2. Apply DC voltage of 170 V to the cathodes of R,G and B from DC stabilized power source.
3. While watching the picture, adjust the G2 control (RV 702) to the just the retrace line disappears.

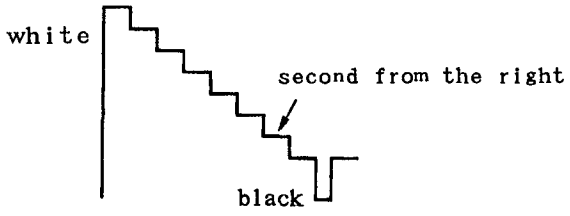
2. WHITE BALANCE ADJUSTMENTS

No.	Disp.	Item	Ave. Data
14	GAMP	Green Amp	20
15	BAMP	Blue Amp	17
16	GCUT	Green Cut-off	7
17	BCUT	Blue Cut-off	8
22	SBRT	Sub Bright	35

1. Input an entire white signal.
2. Set to service adjustment mode.
3. Set the PICTURE and BRIGHT to minimum.
4. Adjust with SBRT if necessary.
5. Select G CUT and B CUT with [1] and [4].
6. Adjust with [3] and [6] for the best white balance.
7. Set the PICTURE and BRIGHT to maximum.
8. Select GAMP and BAMP with [1] and [4].
9. Adjust with [3] and [6] for the best white balance.
10. Write into the memory by pressing [MUTING] then [ENTER].

3. SUB BRIGHT ADJUSTMENT

1. Set to service mode.
2. Input a staircase signal of black and white from the pattern generator.
3. BRIGHTNESS ··· RESET
   PICTURE ····· minimum
4. Select SBRT with [1] and [4], and adjust SUB BRIGHT level with [3] and [6] so that the stripe second from the right is dimly lit.



SECTION 4
SAFETY RELATED ADJUSTMENTS

⊠ R511 CONFIRMATION METHOD (HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components (marked with ◪ on the schematic diagram).
PM501, R338, R511, R632, R645, R650

①

1. Preparation before confirmation
   1) Remove R635 on the D board and connect a variable resistor (RV1: about 4.7kΩ-10kΩ) between pin ① of IC601 and B+ line.
   2) Supply 130±2.0V AC to with variable autotransformer.
2. Hold-down operation confirmation
   1) Turn the POWER switch ON, and receive entirely white signals and adjust ABL current to 1760±50μA with PICTURE and BRIGHT etc controls.
   2) Increase B+ line voltage gradually by adjusting the resistor of RV1. Confirm that the minimum voltage is less than 142.5V DC (27 inch) 140.0V DC (32 inch) whereby the raster disappears during operation of hold-down circuit.
      NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.
   3) Turn the POWER switch ON, and receive dot signals and adjust ABL current to 160±50μA with PICTURE and BRIGHT etc controls.
   4) Increase B+ line voltage gradually by adjusting the resistor of RV1. Confirm that the minimum voltage is less than 145.0V DC (27 inch), 143.5V DC (32 inch) whereby the raster disappears during operation of hold-down circuit.
      NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.
3. Hold-down readjustment
   When step 2 is not satisfied, readjustment should be performed by altering the resistance value of R511 (a component marked with ⊠).

⊠ R524 CONFIRMATION METHOD (HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components (marked with ◪ on the schematic diagram).
IC601, PM501, D504, C598, R338, R509, R524, R632, R635, R645, T501

②

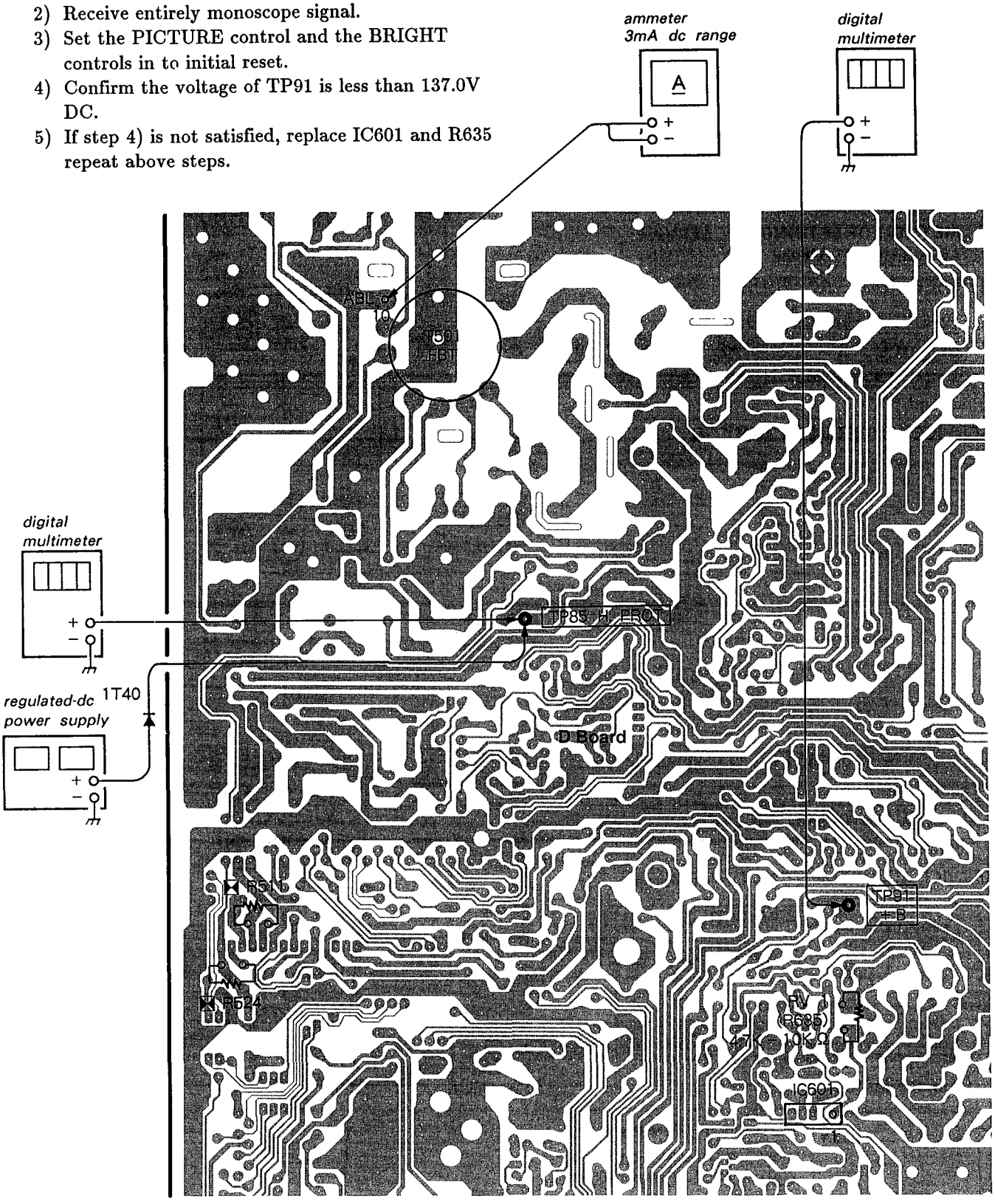
1. Preparation before confirmation
   1) Turn the POWER switch ON, and receive entirely white signals and set the PICTURE and BRIGHT controls to maximum.
   2) Confirm that voltage of the check terminal of TP-85 (D BOARD) is more than 114.0V DC (27 inch) 122.3V DC (32inch) when the set is operating normally with 120.0±2.0V AC supply.
2. Hold-down operation confirmation
   1) Turn the POWER switch ON, and receive entirely white signals and adjust ABL current to 1760±50μA with PICTURE and BRIGHT etc controls .
   2) Apply DC voltage of over 130.0V DC gradually to the check terminal of TP-85 (D BOARD) via 1T40 from the DC stabilized power source. Confirm that the minimum voltage is less than 137.5V DC (27inch) 143.5V DC (32inch) whereby the raster disappears during operation of hold-down circuit.
      NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.
   3) Turn the POWER switch ON, and receive dot signals and adjust ABL current to 160±50μA with PICTURE and BRIGHT etc controls .
   4) Apply DC voltage of over 130.0V gradually to the check terminal of TP-85 (D BOARD) via 1 T40 from the DC stabilized power source. Confirm that the minimum voltage is less than 138.0V DC (27inch) 144.1V DC (32inch) whereby the raster disappears during operation of hold-down circuit.
      NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.
3. Hold-down readjustment
   When step 2 is not satisfied, readjustment should be performed by altering the resistance value of R524 (a component marked with ⊠).

B+ VOLTAGE CONFIRMATION

The following adjustments should always be performed when replacing IC601 and R635.

1) Supply $130 \pm^{2.0}_{6.0}$V AC to with variable autotransformer.
2) Receive entirely monoscope signal.
3) Set the PICTURE control and the BRIGHT controls in to initial reset.
4) Confirm the voltage of TP91 is less than 137.0V DC.
5) If step 4) is not satisfied, replace IC601 and R635 repeat above steps.

* Use a digital multimeter whose input impedance over 100 MΩ when confirming the voltage of the protector terminal of TP85.



SECTION 5
CIRCUIT ADJUSTMENTS

5-1. ELECTRICAL ADJUSTMENT BY REMOTE COMMANDER

Use of Remote Commander can be performed circuit adjustments about this model.

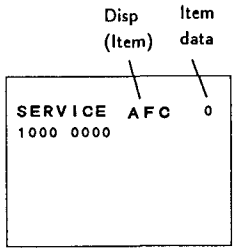
NOTE : Test Equipment Required.
1. Pattern Generator
2. Frequency counter
3. Digital multimeter
4. Audio OSC

1. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

SERVICE MODE PROCEDURE

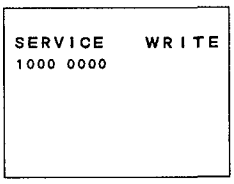
1. Standby mode.(Power off)
2. [DISPLAY] → [5] → [VOL (+)] → [POWER] on the Remote Commander. (Press each button within a second.)

SERVICE ADJUSTMENT MODE IN



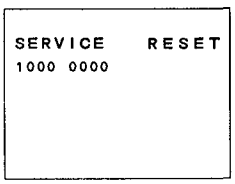
3. The CRT displays the item Being adjusted.
4. Press [1] or [4] on the Remote Commander to select the item.
5. Press [3] or [6] on the Remote Commander to change the data.
6. Press [MUTING] then [ENTER] to write into memory.

SERVICE ADJUSTMENT MODE MEMORY



[MUTING] Green
↓
[ENTER] Red

7. Press [8] then [ENTER] on the Remote Commander to initialize.



Carry out step 7) when adjusting IDs 0 to 4 and when replacing and adjusting IC102.

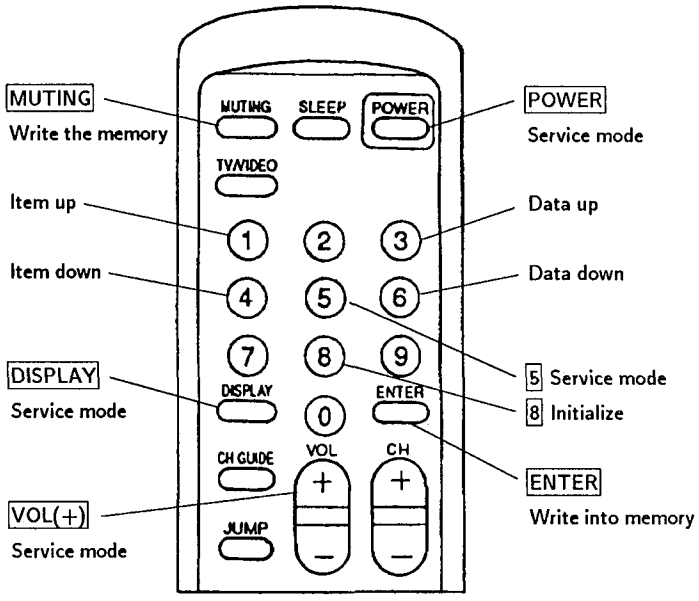
Factory original setting

8. Turn set off and on to exit.

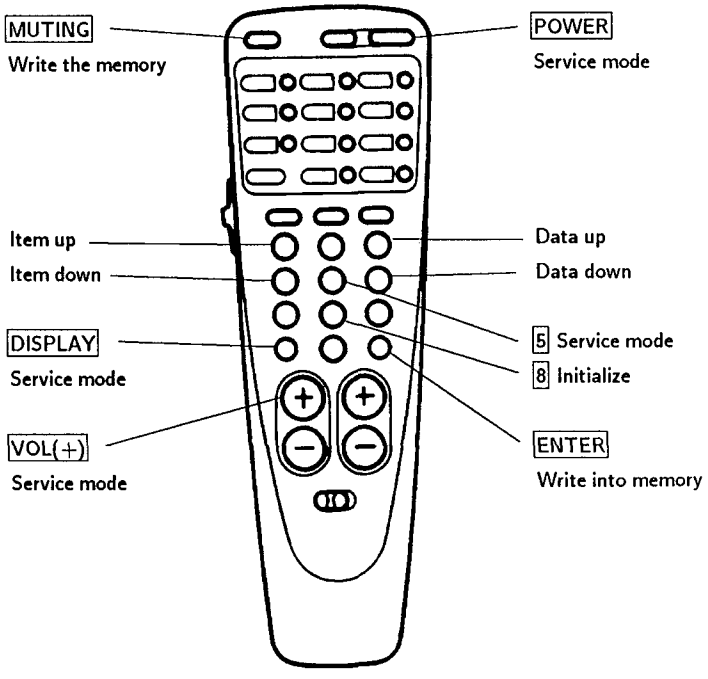
2. MEMORY WRITE CONFIRMATION METHOD

1. After adjustment, pull out the plug from AC outlet, and next place, plug in AC outlet again.
2. Turn the power switch ON and set to Service Mode.
3. Call the adjusted items again, confirm they were adjusted.

3. ADJUST BUTTONS AND INDICATOR



RM-Y116



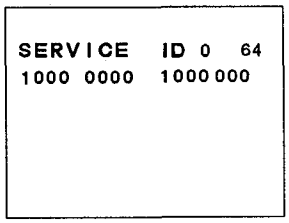
RM-Y121

4. AN ITEM OF ADJUSTMENTS

No.	Disp.	Item	Data range	Ave. data (27 inch)	Ave. data (32 inch)
1	AFC	AFC Loop Gain	0~3	* 0	* 0
2	HFRE	H. Frequency	0~127	70	70
3	VFRE	V. Frequency	0~31	14	14
4	VPOS	V. Center	0~31	17	17
5	VSIZ	V. Size	0~63	28	28
6	VLIN	V. Linearity	0~15	8	8
7	VSCO	V. Correction	0~15	6	6
8	HPOS	H. Center	0~15	6	6
9	HSIZ	H. Size	0~31	31	31
10	PAMP	Pin Amp	0~31	24	24
11	CPIN	Corner Pin	0~7	3	3
12	PPHA	Pin Phase	0~15	6	6
13	VCOM	V. Compensation	0~7	* 2	* 2
14	GAMP	Green Amp	0~31	20	20
15	BAMP	Blue Amp	0~31	17	17
16	GCUT	Green Cut Off	0~15	7	7
17	BCUT	Blue Cut Off	0~15	8	8
18	CROM	Chroma Trap	0~63	* 28	* 28
19	SPIX	Sub Contrast	0~63	20	20
20	SHUE	Sub Hue	0~63	33	33
21	SCOL	Sub Color	0~63	32	32
22	SBRT	Sub Bright	0~63	35	35
23	RGBP	RGB Picture	0~63	* 30	* 10
24	SHAP	Sharpness	0~15	* 10	7
25	VSMO	V Pull in Range	0, 1	* 0	* 0
26	REF	Refference line	0~3	* 2	* 2
27	ROFF	Red Out	0, 1	1	1
28	GOFF	Green Out	0, 1	1	1
29	BOFF	Blue Out	0, 1	1	1
30	ABLM	ABL Mode	0, 1	* 0	* 0
31	NOTC	Notch On/Off	0, 1	* 1	* 1
32	DRGB	OSD intensity	0, 1	* 0	* 0
33	DISP	Display Position	0~63	40	40
34	DPDV	Lumipon (dpdv)	0~3	* 1	* 1
35	MPIC	Lumipon (depth)	0~63	* 48	* 48
36	SVOL	Sub Volume	0~15	* 0	* 0
37	SBAL	Sub Balance	0~15	7	7
38	BASS	Sub Bass	0~15	* 8	* 8
39	TRE	Sub Treble	0~15	* 7	* 7
40	UYBO	Upper Y. Bow	0~63	31	31
41	LYBO	Lower Y. Bow	0~63	25	25
42	HAMP	H. Amp	0~63	33	33
43	HTIL	H. Tilt	0~63	33	33
44	UCBO	Upper C. Bow	0~63	38	38
45	UTIL	Upper Tilt	0~63	40	40
46	LCBO	Lower C. Bow	0~63	41	41
47	LTIL	Lower Tilt	0~63	46	46
48	DCSH	DC. Shift	0~63	37	37
49	PHPO	PinP H Position	0~127	76	76
50	PHUE	PinP Hue	0~127	* 0	* 0
51	ID-0	Model ID	0~127	by Model	by Model
52	ID-1	Model ID	0~127	by Model	by Model
53	ID-2	Model ID	0~127	by Model	by Model
54	ID-3	Model ID	0~127	by Model	by Model
55	ID-4	Model ID	0~127	by Model	by Model

* : Set-up value

Note : No.from 1 to 55 is to show adjusment order.



Please adjust the function values as shown below when IC 102 on M board was replaced.

KV-27S10 (US/CND)

No.	Disp.	Disp.	Data
51	ID-0	1 0 0 0 0 0 0	64
52	ID-1	1 0 0 1 1 0 1	77
53	ID-2	1 0 0 0 0 0 0	64
54	ID-3	0 0 0 0 0 0 0	0
55	ID-4	0 0 1 0 0 0 0	16

KV-27S15 (US/CND)

No.	Disp.	Disp.	Data
51	ID-0	1 0 1 1 0 0 0	88
52	ID-1	1 1 1 1 1 1 1	127
53	ID-2	1 0 0 0 0 0 0	64
54	ID-3	1 0 0 0 0 0 0	64
55	ID-4	0 0 1 0 0 0 0	16

KV-29RS10 (E)

No.	Disp.	Disp.	Data
51	ID-0	1 0 0 0 0 0 0	64
52	ID-1	1 0 0 1 1 0 1	77
53	ID-2	0 1 0 0 0 0 0	32
54	ID-3	0 0 0 0 0 0 0	0
55	ID-4	0 0 1 0 0 0 0	16

KV-29RS15 (E)

No.	Disp.	Disp.	Data
51	ID-0	1 0 1 1 0 0 0	88
52	ID-1	1 1 1 1 1 1 1	127
53	ID-2	0 1 0 0 0 0 0	32
54	ID-3	1 0 0 0 0 0 0	64
55	ID-4	0 0 1 0 0 0 0	16

KV-32S10 (US/CND)

No.	Disp.	Disp.	Data
51	ID-0	1 0 0 1 0 0 0	72
52	ID-1	1 0 0 1 1 0 1	77
53	ID-2	1 0 0 0 0 0 0	64
54	ID-3	0 0 0 0 0 0 0	0
55	ID-4	0 0 1 0 0 0 0	16

KV-32S15 (US/CND)

No.	Disp.	Disp.	Data
51	ID-0	1 1 1 1 0 0 0	120
52	ID-1	1 1 1 1 1 1 1	127
53	ID-2	1 0 0 1 0 0 0	72
54	ID-3	1 0 0 0 1 0 0	64
55	ID-4	0 0 1 0 0 0 0	16

5-2. MBOARD ADJUSTMENTS

H.FREQUENCY ADJUSTMENT (HFRE)

1. Input a color-bar signal.
2. Set to Service adjustment Mode.
3. Connect a frequency counter to CN131 Pin⑬ (H. DRIVE) connector and ground.
4. Call the item of AFC, set to 3 level (free run).
5. Select HFRE with 1 and 4.
6. Adjust with 3 and 6 for the 15734± 60Hz.
7. Call the item of AFC again, adjust the level" 0 ".
8. Write into the memory by pressing MUTING then ENTER.

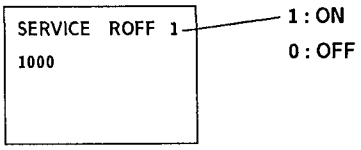
V.FREQUENCY ADJUSTMENT (VFRE)

1. Select video 1 with no connecting the signal.
2. Set to Service adjustment Mode.
3. Connect the frequency counter across connectorCN131 Pin⑦ (V. DRIVE) connector and ground.
4. Select VFRE with 1 and 4.
5. Adjust with 3 and 6 for the 56 ±0.5Hz.
6. Write the memory by pressing MUTING then ENTER .

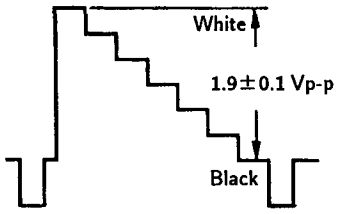
SUB CONTRAST ADJUSTMENT (SPIX)

1. Input a color-bar signal.
2. Set to Service adjustment Mode.
3. Set the conditions as follows.

PICTURE ····· MAX
COLOR ····· MIN
BRIGHT ····· CENTER
R OFF ····· ON (1)
G OFF ····· OFF (0)
B OFF ····· OFF (0)



4. Connect an oscilloscope to CN703 Pin① (R OUT) of C board and ground.
5. Select SPIX with 1 and 4.
6. Adjust with 3 and 6 for the 1.9±0.1Vp-p.

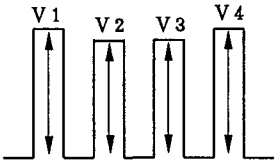


7. Write the memory by pressing MUTING then ENTER .
8. Return the following back to normal after adjustment.

PICTURE ····· MAX
BRIGHT ····· CENTER
COLOR ····· CENTER
R OFF ····· ON
G OFF ····· ON
B OFF ····· ON

SUB HUE, SUB COLOR ADJUSTMENT (SHUE, SCOL)

1. Input a color-bar signal.
2. Set to service adjustment mode.
3. Connect an oscilloscope to CN703 Pin③ (B OUT) of C board.
4. Select SHUE and SCOL with 1 and 4.
5. Adjust with 3 and 6 for the V1=V4 (SCOR) and V2 =V3 (SHUE).



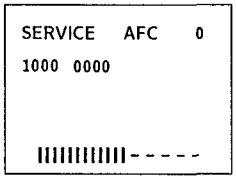
6. Increase the data of SCOL by 5 steps.
7. Write into the memory by pressing MUTING then ENTER .

SUB BARANCE ADJUSTMENT (SBAL)

1. Input a stereo signal.
2. Set to service adjustment mode.
3. Select SBAL with 1 and 4.
4. Adjust with 3 and 6 for the best sound balance
5. Write into the memory by pressing MUTING then ENTER .

DISPLAY POSITION ADJUSTMENT (DISP)

1. Input a color-bar signal.
2. Set to service adjustment Mode.
3. Select DISP with 1 and 4.
4. Adjust with 3 and 6 for the bar center.
5. Write the memory by pressing MUTING then ENTER .

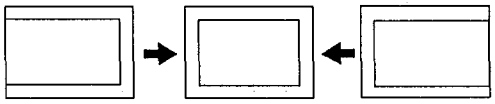


H.CENTER ADJUSTMENT (H POS)

Note: Perform this adjustment after H.FREQUENCY ADJUSTMENT (HFRE) .

1. Input a cross-hatch signal.
2. Set the Service adjustment mode.
3. Select HPOS with 1 and 4 .
4. Adjust with 3 and 6 to the best horizontal center.
5. Write into the memory by pressing MUTING then ENTER .

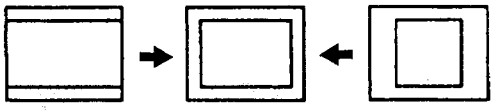
H. CENTER (HPOS)



H.SIZE ADJUSTMENT (HSIZ)

1. Input a cross-hatch signal.
2. Set to service adjustment Mode.
3. Select HSIZ with 1 and 4.
4. Adjust with 3 and 6 for best horizontal size.
5. Write into the memory by pressing MUTING then ENTER .

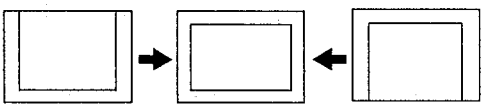
H. SIZE (HSIZ)



V.CENTER ADJUSTMENT (VPOS)

1. Input a cross-hatch signal.
2. Set to service adjustment Mode.
3. Select VPOS with 1 and 4.
4. Adjust with 3 and 6 for the best vertical senter.
5. Write into the memory by pressing MUTING then ENTER .

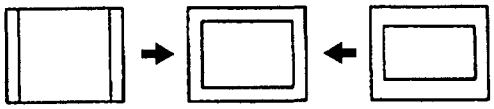
V. CENTER (VPOS)



V.SIZE ADJUSTMENT (VSIZ)

1. Input a cross-hatch signal.
2. Set to service adjustment Mode.
3. Select VSIZ with 1 and 4.
4. Adjust with 3 and 6 for the best vertical size.
5. Write into the memory by pressing MUTING then ENTER .

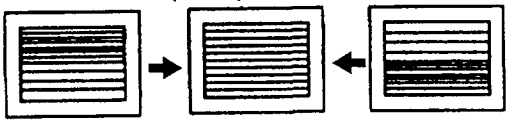
V. SIZE (VSIZ)



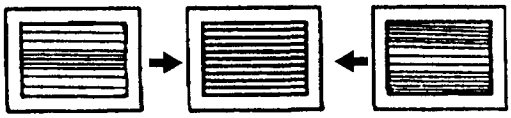
V LINEARITY(VLIN), VS CORRECTION(VSCO), PIN AMP(PAMP), CORNER PIN(CPIN), AND PIN PHASE(PPHA) ADJUSTMENTS

1. Input a cross-hatch signal.
2. Set to Service adjustment Mode.
3. Select VLIN, VSCO, PAMP, CPIN, and PPHA with 1 and 4.
4. Adjust with 3 and 6 for the best picture.
5. Write the memory byPressing MUTING then ENTER.

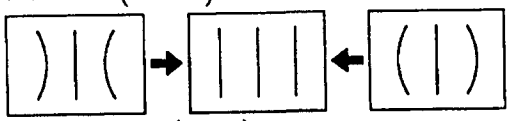
V LINEARITY (VLIN)



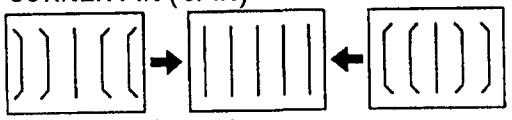
VS CORRECTION (VSCO)



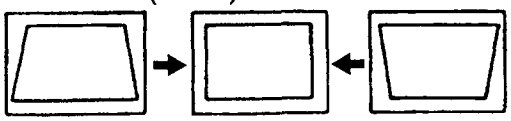
PIN AMP (PAMP)



CORNER PIN (CPIN)



PIN PHASE (PPHA)



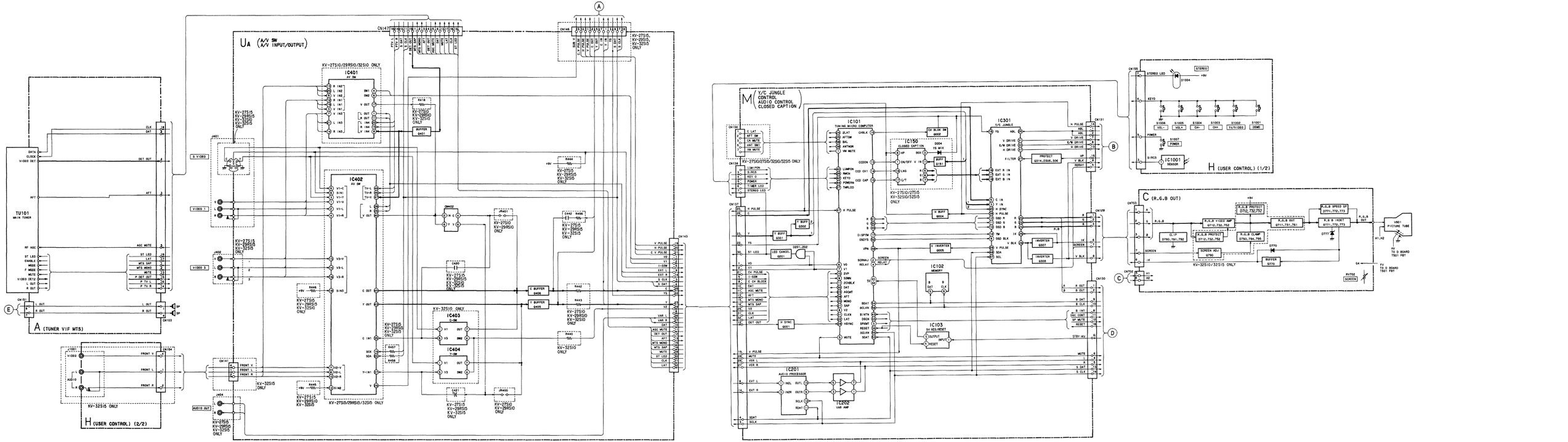
5-3. P BOARD ADJUSTMENTS

P IN P H. POSITION (PHPO)

1. Input a color-bar signal
2. Set to Service adjustment Mode.
3. Select PHPO with 1 and 4.
4. Adjust with 3 and 6 for the best balanced cent position at 4 corner P in P display position.
5. Write the memory by pressing MUTING then ENTER .

SECTION 6 DIAGRAMS

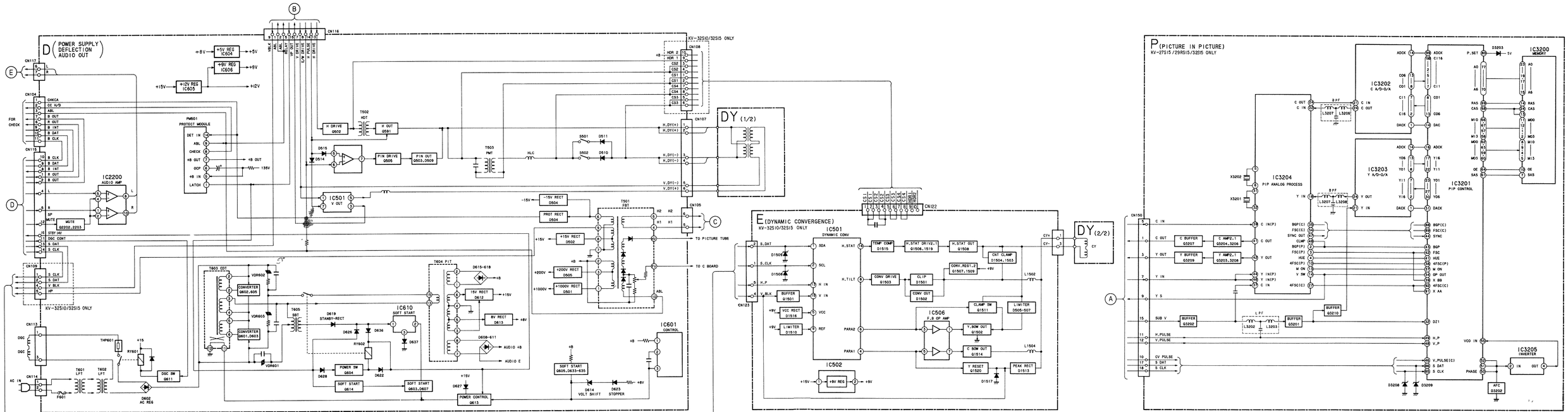
6-1. BLOCK DIAGRAMS (1)

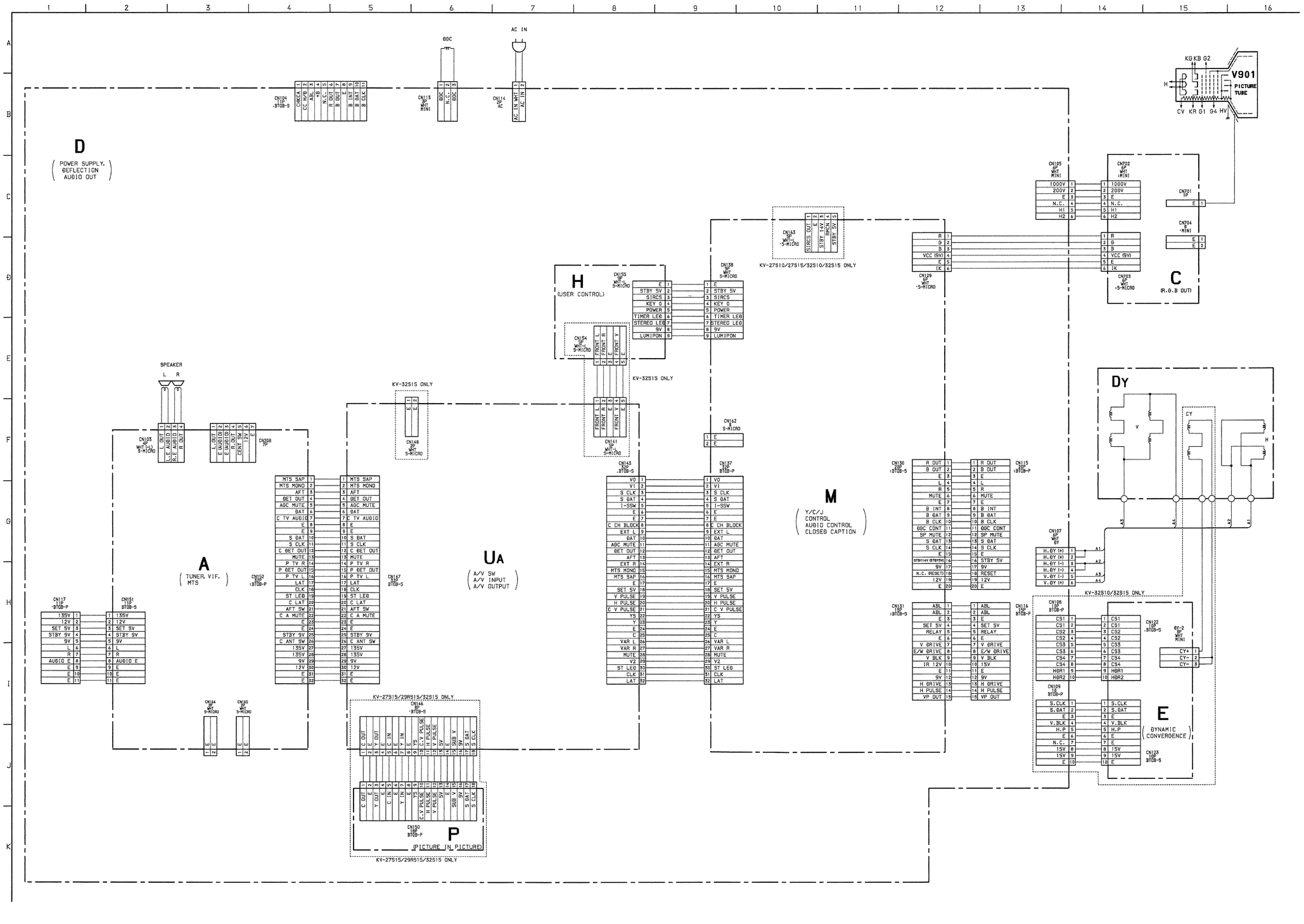

A (TUNER V/IF MTS)
H (USER CONTROL) (2/2)
UA (A/V SW INPUT/OUTPUT)
M (Y/C JUNGLE CONTROL AUDIO CONTROL CLOSED CAPTION)
H (USER CONTROL) (1/2)
C (R,G,B OUT)
TU101 MAIN TUNER
IC401 AV SW
IC402 AV SW
IC403 S-SW
IC404 S-SW
IC101 TUNING MICRO COMPUTER
IC1350 CLOSED CAPTION
IC301 Y/C JUNGLE
IC102 MEMORY
IC103 5V RESET
IC201 AUDIO PROCESSOR
IC202 1W2 AMP
IC1001 5B0508
KV-27S10/29RS10/32S10 ONLY
KV-27S15 KV-29RS15 KV-32S15 ONLY
KV-27S10/29RS10/32S10/32S15 ONLY
KV-32S10/32S15 ONLY
KV-27S15, KV-29RS15, KV-32S15 ONLY
KV-27S10/27S15/29RS15/32S10/32S15 ONLY
KV-27S10/27S15/29RS15/32S10/32S15 ONLY
KV-27S10/27S15/29RS10/32S10 ONLY
KV-27S15 KV-29RS15 KV-32S15 ONLY
KV-27S10/29RS10 KV-32S10 ONLY
KV-27S10/27S15/29RS15/32S10/32S15 ONLY
KV-27S10/27S15/29RS10/32S10/32S15 ONLY
KV-27S10/27S15/29RS10/32S10/32S15 ONLY
KV-27S10/27S15/29RS10

KV-27S10/27S15/29RS10
RM-Y116 RM-Y121 RM-Y116
KV-29RS15/32S10/32S15
RM-Y121 RM-Y116 RM-Y121

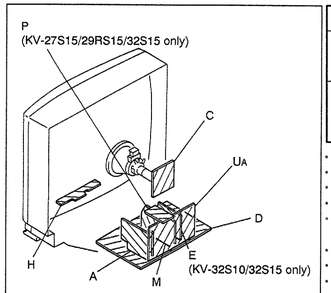
KV-27S10/27S15/29RS10
RM-Y116 RM-Y121 RM-Y116
KV-29RS15/32S10/32S15
RM-Y121 RM-Y116 RM-Y121

6-2. BLOCK DIAGRAMS (2)




D
POWER SUPPLY, DEFLECTION AUDIO OUT
A
TUNER, VIF, MTS
Ua
A/V SW INPUT A/V OUTPUT
M
Y/C/J CONTROL AUDIO CONTROL CLOSED CAPTION
H
(USER CONTROL)
C
(R.G.B OUT)
E
DYNAMIC CONVERGENCE
P
(PICTURE IN PICTURE)
Dy
V901
PICTURE TUBE
SPEAKER
AC IN
KV-27S10/27S15/32S10/32S15 ONLY
KV-32S15 ONLY
KV-27S15/29RS15/32S15 ONLY
KV-32S10/32S15 ONLY

6-4. CIRCUIT BOARDS LOCATION



Part replaced (◪)		Adjustment (🖬)
PM501, R511, R632, R645, R650	D BOARD	HOLD-DOWN (R511)
R338	M BOARD	
IC601, PM501, D504, C598 R509, R524, R632, R635, R645, T501	D BOARD	HOLD-DOWN (R524)
R338	M BOARD	

- All voltages are in V
- Voltage are dc with respect to ground unless otherwise noted
- Readings are taken with a 10 MΩ digital multimeter
- Readings are taken with a color-bar signal input
- Voltage variations may be noted due to normal production tolerance
- Circled numbers are waveform references
- : B+ line
- : B– line
- : signal path

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The symbol display is on the component side.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

The symbol indicate fast operating fuse. Replace only with fuse of same rating as marked.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Le symbole indique une fusible a action rapide. Doit etre remplacee par une fusible de meme valeur, comme maque.

6-5. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

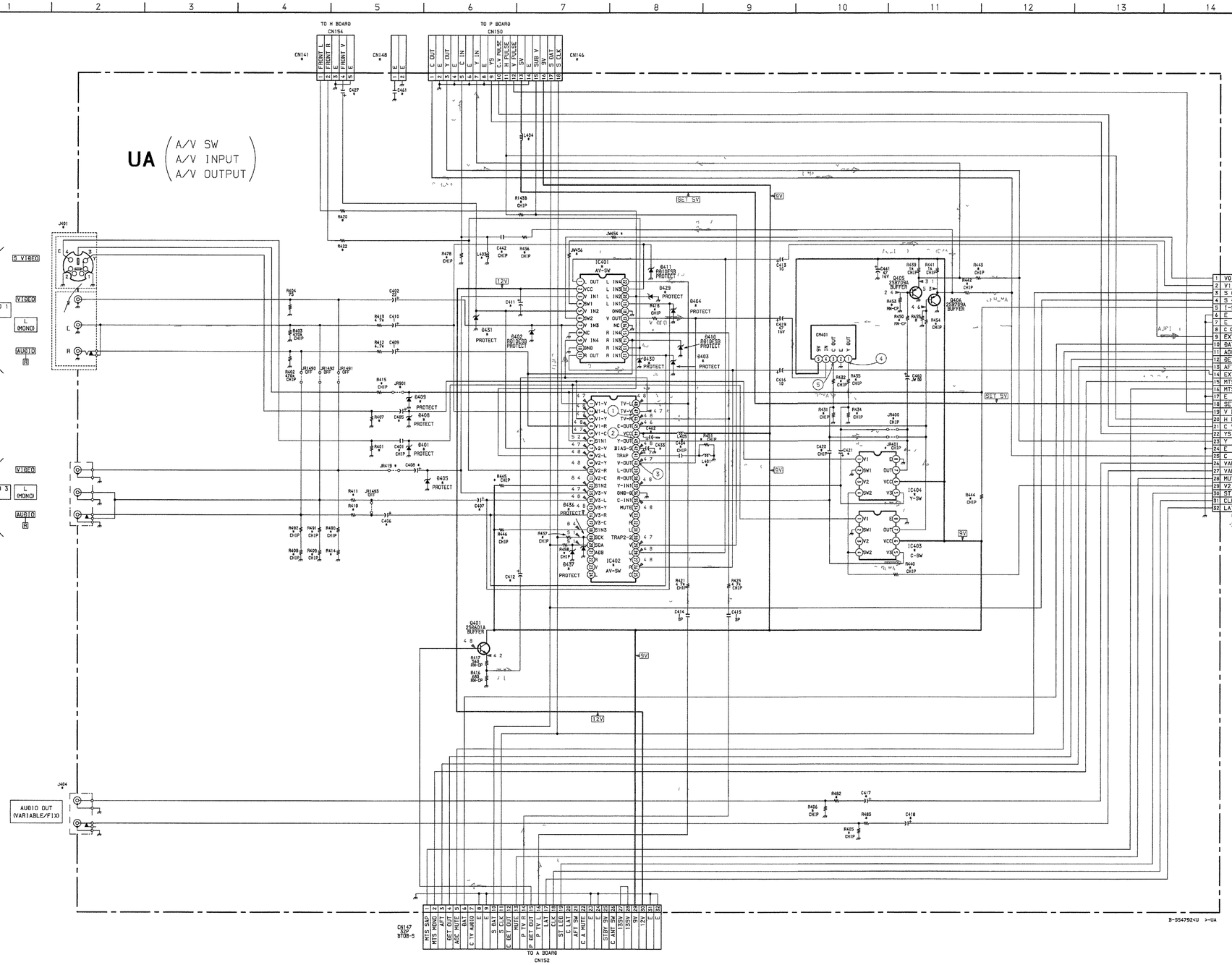
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytic and tantalums.
- All electrolytics are in 50V unless otherwise specified.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power 1/4W

- Chips resistors are 1/10W.
- All resistors are in ohms. kΩ=1000Ω, MΩ=1000KΩ
- : nonflammable resistor.
- : fusible resistor.
- △: internal component.
- : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-ground. (cool)
- : earth-chassis. (hot)
- The components identified by ◪ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by 🖬 and repeat the adjustment until the specified value is achieved. (Refer to R511 and R524 on page 34, 35)
- When replacing the part in below table be sure to perform the related adjustment.

Schematic diagrams

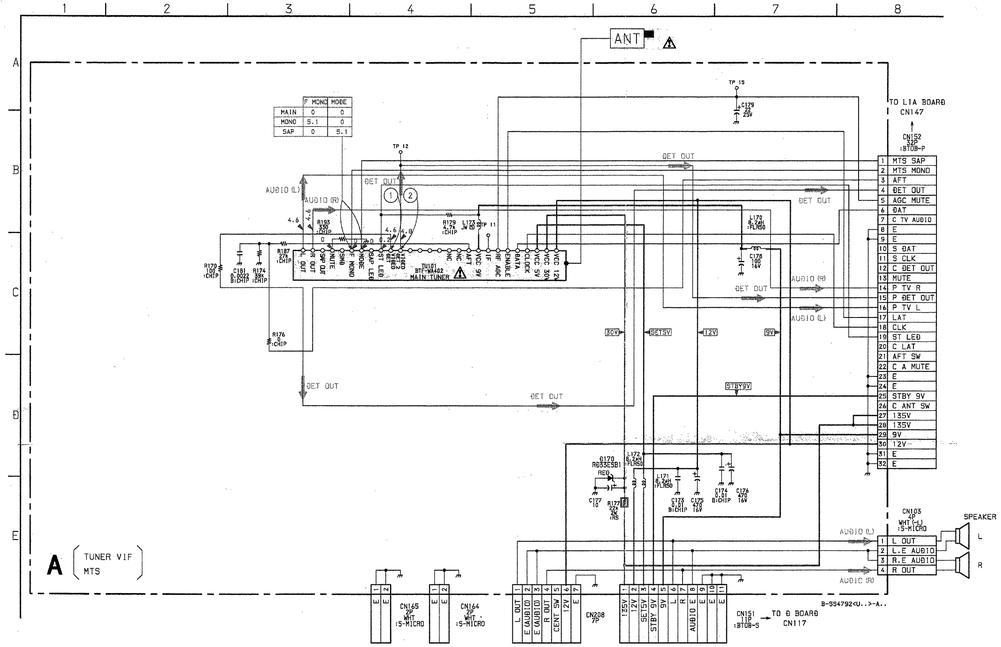
UA boards ➡



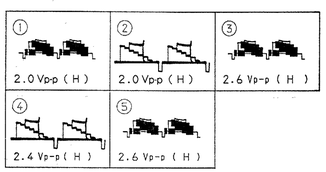
– UA board –

Ref	LOCATION	KV-27S10 (U/C) KV-29RS10 (E)	KV-32S10 (U/C)	KV-27S15 (U/C) KV-29RS15 (E)	KV-32S15 (U/C)
C401	E – 5	–	0.01 F : CHIP	0.01 F : CHIP	0.01 F : CHIP
C405	E – 5	–	22 25V	22 25V	22 25V
C406	F – 5	–	–	1	1
C407	F – 6	–	–	1	1
C408	F – 6	–	–	22 25V	22 25V
C411	D – 7	100 25V	100 25V	–	–
C417	H – 10	–	–	0.47	0.47
C418	I – 11	–	–	0.47	0.47
C420	E – 10	–	0.01 F : CHIP	0.01 F : CHIP	0.01 F : CHIP
C421	E – 10	–	0.047	22 25V	22 25V
C427	A – 5	–	–	–	JW (5)
C433	E – 8	–	–	33 25V	33 25V
C434	E – 8	–	–	100P : CHIP	100P : CHIP
C442	C – 6	–	–	100P : CHIP	100P : CHIP
C461	A – 5	–	–	JW (5)	JW (5)
C462	E – 8	–	–	100 16V	100 16V
CN141	A – 4	–	–	–	5P WHT-L : S-MICRO
CN146	A – 6	–	–	18P : BTOB-S	18P : BTOB-S
CN148	A – 5	–	–	–	2P WHT-L : S-MICRO
D401	E – 5	–	–	RD10ESB	RD10ESB
D403	D – 8	–	–	RD10ESB	RD10ESB
D404	D – 8	–	–	RD10ESB	RD10ESB
D405	F – 6	–	–	RD10ESB	RD10ESB
D408	E – 5	–	RD10ESB	RD10ESB	RD10ESB
D409	E – 5	–	RD10ESB	RD10ESB	RD10ESB
D429	D – 8	–	–	–	RD10ESB
D430	D – 8	–	–	–	RD10ESB
D431	D – 8	–	–	–	RD10ESB
D436	F – 7	–	–	RD10ESB	RD10ESB
D437	F – 7	–	–	RD10ESB	RD10ESB
IC401	D – 7	M52470AP	M52470AP	–	–
IC402	F – 8	–	–	CXA1545AS	CXA1545AS
IC403	F – 10	–	MM1114XFF	–	–
IC404	F – 10	–	MM1118XFF	–	–
J401	D – 4	PIN JACK BLOCK	S-TERMINAL BLOCK	S-TERMINAL BLOCK	S-TERMINAL BLOCK
J402	E – 2	–	–	PIN JACK BLOCK	PIN JACK BLOCK
J404	I – 2	–	–	PIN JACK BLOCK	PIN JACK BLOCK
JR400	E – 11	0 : CHIP	–	–	–
JR401	E – 11	0 : CHIP	–	–	–
JR419	F – 5	–	–	0 : CHIP	0 : CHIP
JR901	E – 5	–	0 : CHIP	0 : CHIP	0 : CHIP
JW454	C – 8	10K	10K	–	–
JW456	C – 7	10K	10K	–	–
L401	E – 9	–	–	18uH : FLR50	18uH : FLR50
L403	C – 6	–	–	33uH : FLR50	33uH : FLR50
L404	B – 7	–	–	33uH : ELO607	33uH : ELO607
L405	E – 8	–	–	JW (5)	JW (5)
R401	E – 5	–	75	75	75
R405	I – 10	–	–	470K : CHIP	470K : CHIP
R406	H – 10	–	–	470K : CHIP	470K : CHIP
R407	E – 5	–	75	75	75
R408	G – 4	–	–	470K : CHIP	470K : CHIP
R409	G – 4	–	–	470K : CHIP	470K : CHIP
R410	F – 5	–	–	4.7K	4.7K
R411	F – 5	–	–	4.7K	4.7K
R414	F – 5	–	–	75	75
R415	E – 5	–	4.7K	4.7K	4.7K
R418	D – 8	100 : CHIP	100 : CHIP	–	–
R420	C – 5	–	–	–	JW (5)
R422	C – 5	–	–	–	JW (5)
R431	E – 10	1K : CHIP	680 : CHIP	1K : CHIP	1K : CHIP
R432	E – 10	0 : CHIP	680 : CHIP	0 : CHIP	0 : CHIP
R434	E – 10	1K : CHIP	680 : CHIP	1K : CHIP	1K : CHIP
R435	E – 10	0 : CHIP	680 : CHIP	0 : CHIP	0 : CHIP
R440	G – 11	–	100 : CHIP	–	–
R442	C – 11	100 : CHIP	100 : CHIP	–	–
R443	C – 11	100 : CHIP	100 : CHIP	–	–
R444	F – 12	–	82K : CHIP	82K : CHIP	82K : CHIP
R445	F – 6	–	–	10K : CHIP	10K : CHIP
R446	F – 6	–	–	10K : CHIP	10K : CHIP
R450	D – 11	100 : RN-CP	100 : RN-CP	470 : RN-CP	470 : RN-CP
R451	E – 9	–	–	4.7K : CHIP	4.7K : CHIP
R453	D – 11	1.2K : RN-CP	1.2K : RN-CP	560 : RN-CP	560 : RN-CP
R454	D – 11	100 : CHIP	100 : CHIP	0 : CHIP	0 : CHIP
R456	C – 7	–	–	470 : CHIP	470 : CHIP
R457	F – 7	–	–	220 : CHIP	220 : CHIP
R458	F – 7	–	–	220 : CHIP	220 : CHIP
R478	C – 8	–	–	470 : CHIP	470 : CHIP
R482	H – 10	–	–	1K	1K
R483	I – 10	–	–	1K	1K
R490	F – 5	–	–	0 : CHIP	0 : CHIP
R491	F – 4	–	–	0 : CHIP	0 : CHIP
R492	G – 4	–	–	0 : CHIP	0 : CHIP
R1438	C – 7	–	–	22K : CHIP	22K : CHIP

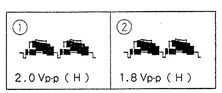
– : NOT MOUNT



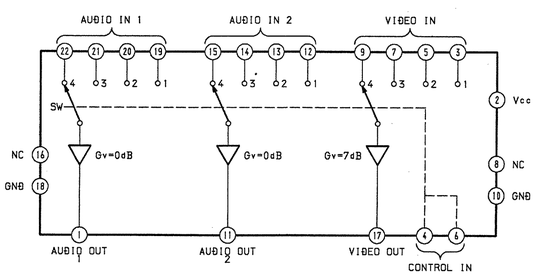
• UA BOARD WAVEFORMS



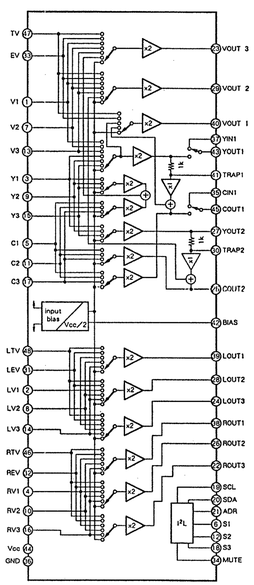
• A BOARD WAVEFORMS



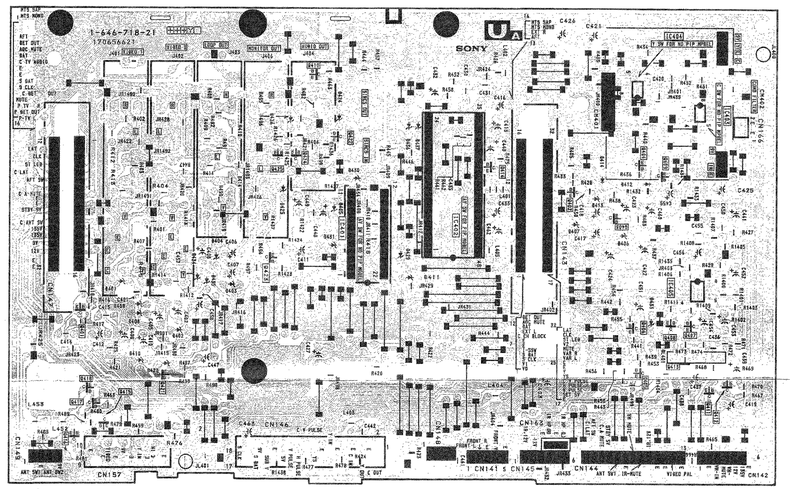
• UA Board IC401 M52470AP



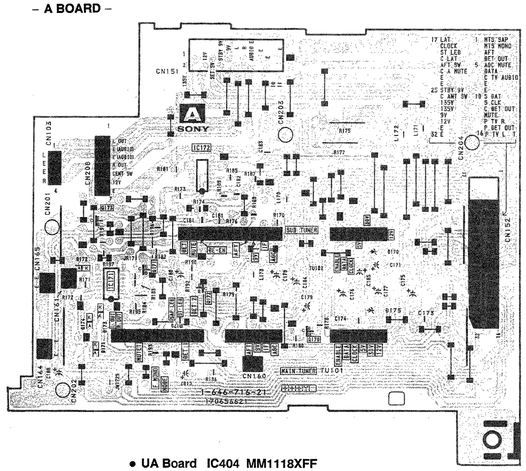
• UA Board IC402 CXA1545AS



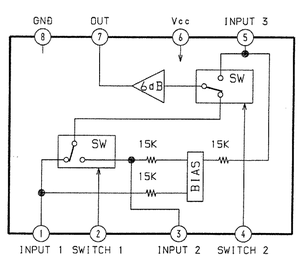
– UA BOARD – 〈Conductor Side〉



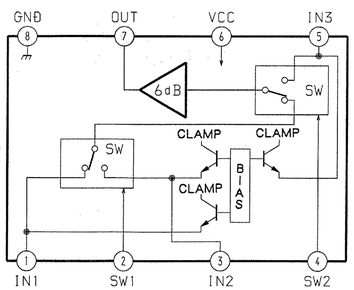
– A BOARD –



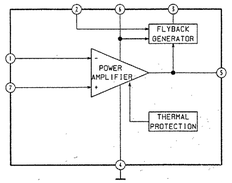
• UA Board IC403 MM1114XFF



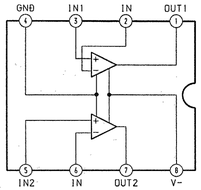
• UA Board IC404 MM1118XFF



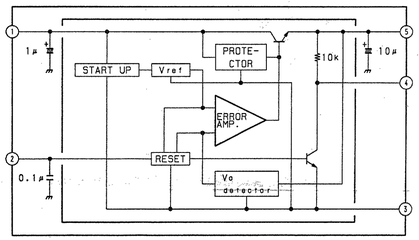
• D Board IC501 TDA8172



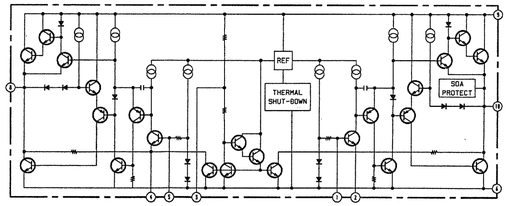
• D Board IC504 μPC393C



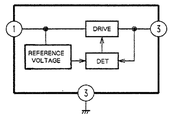
• D Board IC602 L78LR05D



• D Board IC2200 TDA2009A



• D Board IC610 μPC78L05J



• D BOARD WAVEFORMS

① 30 Vp-p (V)	② 60 Vp-p (V)	③ 32 Vp-p (V)
④ 3.5 Vp-p (H)	⑤ 185 Vp-p (H)	⑥ 19 Vp-p (H)
⑦ 1000Vp-p (H)	⑧ 140 Vp-p (H)	⑨ 2.4 Vp-p (V)
⑩ 3.6 Vp-p (H)	⑪ 230 Vp-p (H)	⑫ 2.8 Vp-p (V)

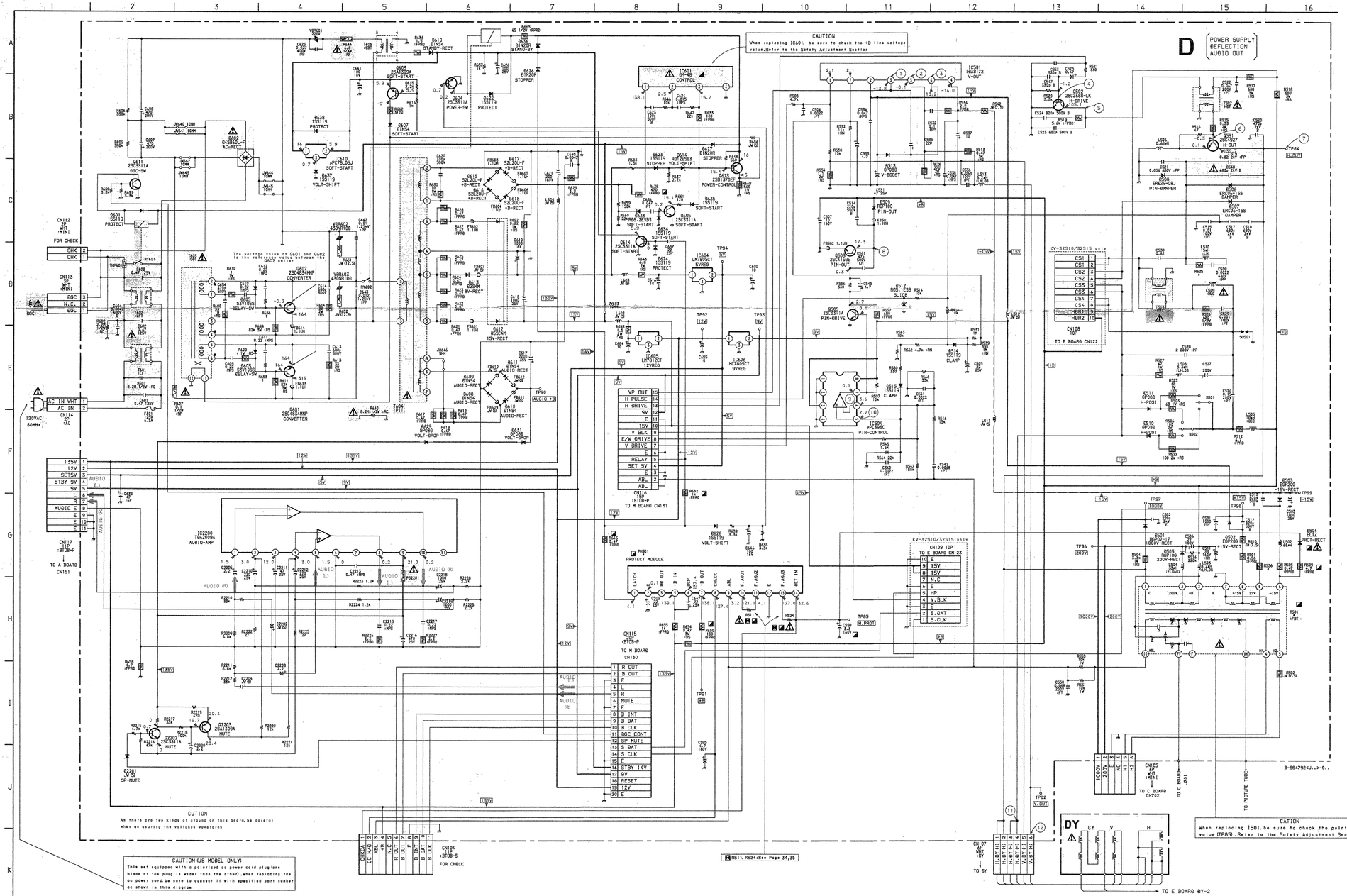
– D board –

Ref	LOCATION	KV-27S10/27S15	KV-29RS10/29RS15	KV-32S10/32S15
RM501	G – 9	PM-39	PM-39	PM-38
R525	D – 15	47 2W	47 2W	–
R536	G – 15	–	–	4.7
T501	H – 16	NX-A2604A3	NX-A2604A3	NX-A2604A3

– : NOT MOUNT

Schematic diagrams ← A boards

Schematic diagrams D boards →

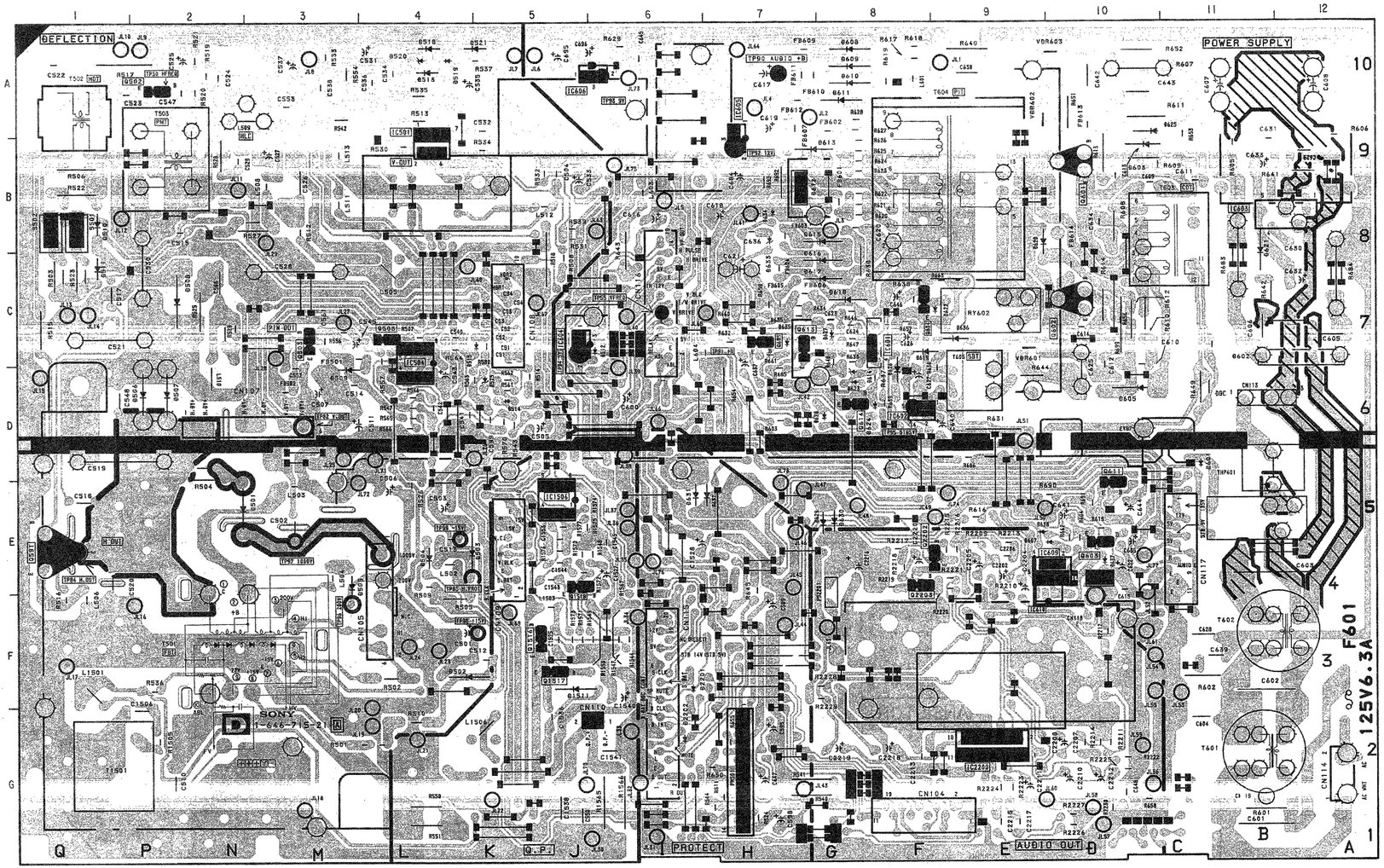

D
POWER SUPPLY
DEFLECTION
AUDIO OUT
CAUTION
When replacing IC601, be sure to check the +B line voltage value.Refer to the Safety Adjustment Section
The voltage value of Q401 and Q402 in the left circle varies between the 60Hz and 50Hz series.
CAUTION
An there are two kinds of ground on this board,be careful when ma easuring the voltages waveforms
CAUTION (US MODEL ONLY)
This set equipped with a polarized ac power cord plug(one blade of the plug is wider than the other).When replacing the ac power cord,be sure to connect it with specified part number as shown in this diagram
DY
CY
V
H
CATION
When replacing T501,be sure to check the point voltage value (TP85).Refer to the Safety Adjustment Section.
TO E BOARD GY-2
TO PICTURE TUBE
TO E BOARD J701
TO E BOARD CN702
TO M BOARD CN130
TO A BOARD CN151
TO E BOARD CN122
TO GY
TO E BOARD GY-1
TO E BOARD CN125
TO E BOARD CN109
TO M BOARD CN131
TO E BOARD CN114
FOR CHECK
B-554792-U..>-6..

KV-27S10/27S15/29RS10
RM-Y116 RM-Y121 RM-Y116
KV-29RS15/32S10/32S15
RM-Y121 RM-Y116 RM-Y121

KV-27S10/27S15/29RS10
RM-Y116 RM-Y121 RM-Y116
KV-29RS15/32S10/32S15
RM-Y121 RM-Y116 RM-Y121

D POWER SUPPLY, DEFLECTION, AUDIO OUT

– D BOARD – 〈Conductor Side〉



IC	
IC501	A – 4
IC504	C – 4
IC601	C – 8
IC604	C – 5
IC605	A – 7
IC606	A – 5
IC610	F – 10
IC2200	G – 9

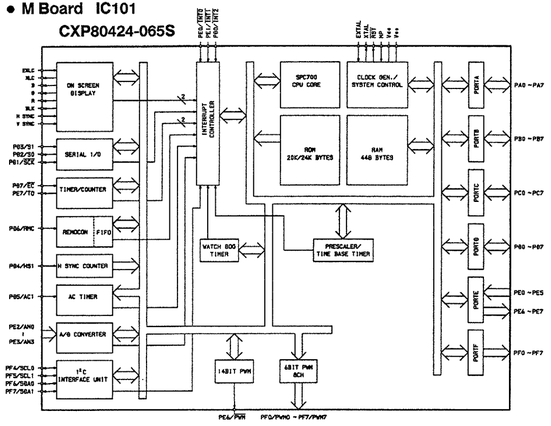
TRANSISTOR	
Q502	A – 2
Q503	C – 3
Q505	C – 4
Q591	E – 1
Q601	B – 10
Q602	C – 10
Q603	E – 10
Q604	C – 8
Q605	C – 7
Q611	E – 10
Q613	C – 7
Q614	D – 8
Q2202	E – 8
Q2203	E – 8

DIODE	
D501	E – 3
D502	F – 4
D503	E – 4
D504	E – 4
D505	E – 3
D506	D – 2
D507	D – 2
D508	C – 2
D509	D – 3
D510	B – 1
D511	C – 1
D512	C – 6
D513	A – 4
D514	D – 5
D515	C – 4
D601	D – 11
D602	C – 11
D603	B – 10
D605	D – 10
D607	E – 10
D608	A – 8
D609	A – 8
D610	A – 8
D611	A – 8
D612	B – 7
D613	B – 8
D614	D – 8
D615	B – 8
D616	C – 8
D617	C – 8
D618	C – 8
D619	C – 8
D622	C – 9
D623	D – 8
D624	D – 8
D626	D – 8
D627	C – 8
D628	D – 8
D633	B – 7
D634	B – 7
D635	C – 8
D636	C – 9
D637	E – 10
D638	E – 10

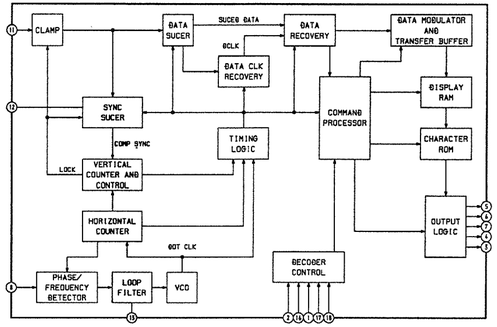
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

KV-27S10/27S15/29RS10
RM-Y116 RM-Y121 RM-Y116
KV-29RS15/32S10/32S15
RM-Y121 RM-Y116 RM-Y121
KV-27S10/27S15/29RS10
RM-Y116 RM-Y121 RM-Y116
KV-29RS15/32S10/32S15
RM-Y121 RM-Y116 RM-Y121

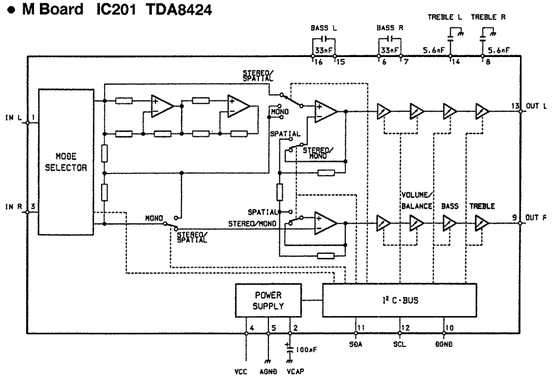
• M Board IC101
CXP80424-065S



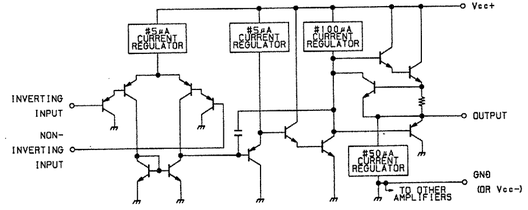
• M Board IC150 MC144143



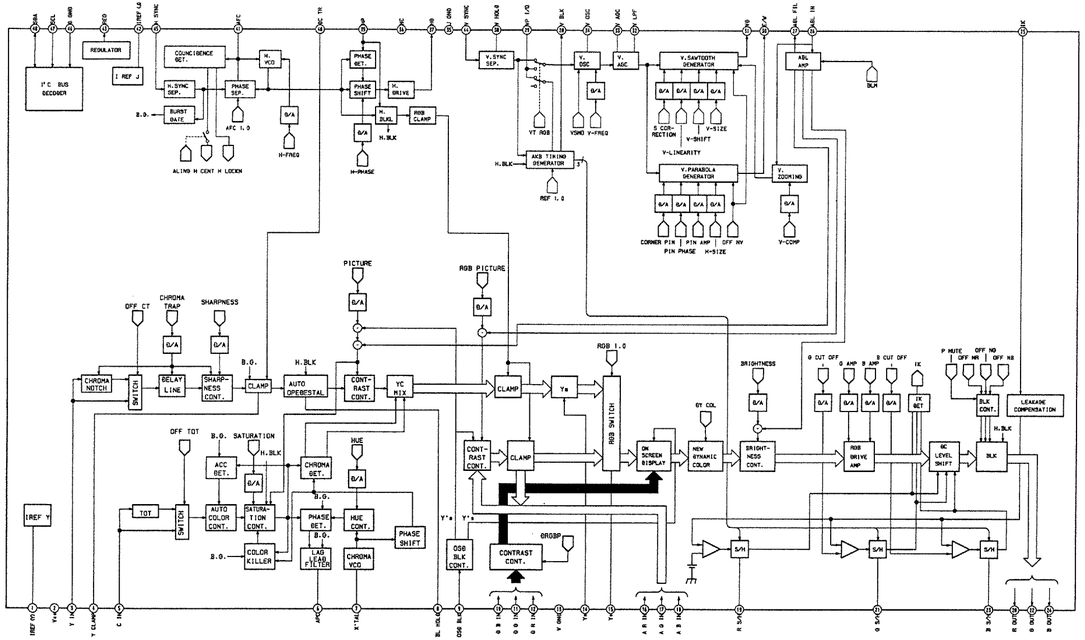
• M Board IC201 TDA8424



• M Board IC202 LM358PS-T1



• M Board IC301 CXA1468AS



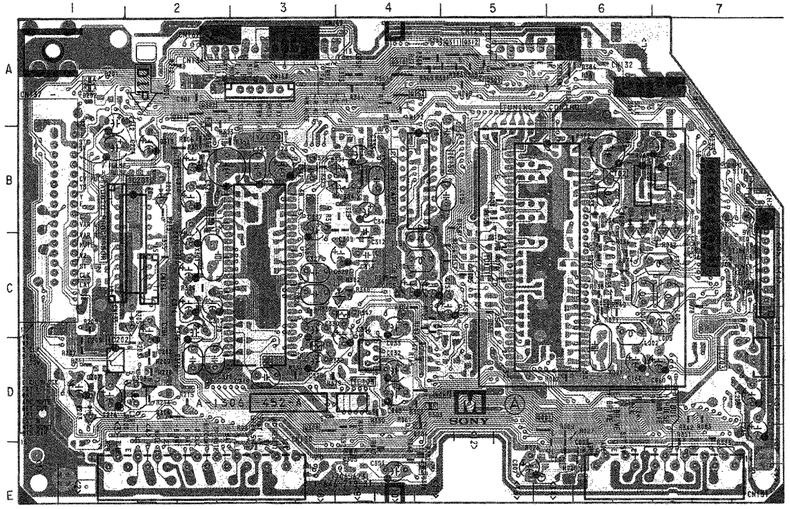
IC		DIODE	
IC101	C-6, H-6	D001	F-5
IC102	B-6, H-6	D002	F-5
IC103	D-4, G-4	D004	D-4
IC150	B-4, H-4	D005	G-6
IC201	B-2, H-2	D006	B-6, H-6
IC202	D-1	D007	B-7, H-7
IC301	B-3, G-3	D008	B-7, H-7
		D009	B-6, H-6
TRANSISTOR		D150	G-4
Q001	D-6	D201	A-1
Q004	G-6	D202	A-1
Q005	H-6	D205	C-2, G-2
Q151	G-5	D206	B-2, H-2
Q201	I-1	D301	B-4, H-4
Q301	A-2	D304	B-4, H-4
Q302	A-2		
Q308	D-3		

M Y/C/J, CONTROL AUDIO, CONTROL CLOSED CAPATION

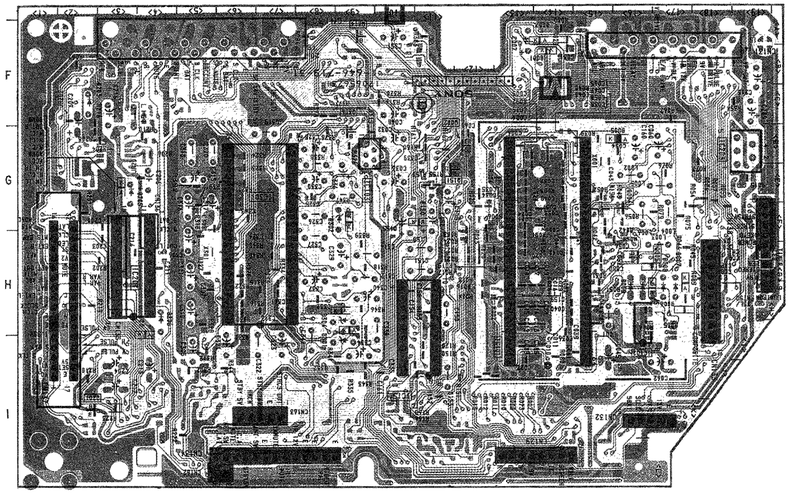
Note :
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

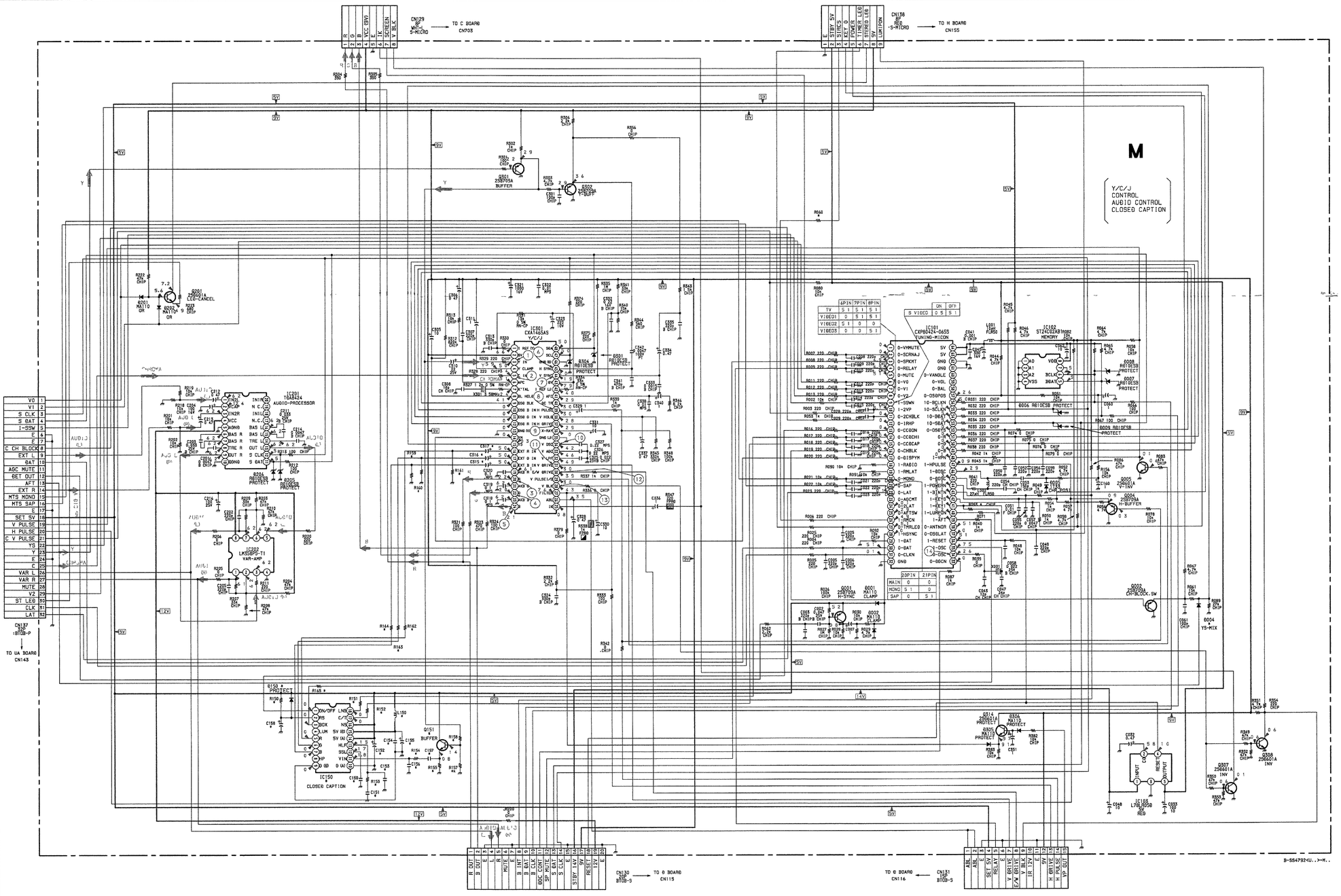
– M BOARD –

〈Component Side〉



〈Conductor Side〉





– M board –

Ref	LOCATION	KV-27S10 / 27S15 (US) KV-32S10 / 32S15	KV-29RS10 (E) KV-29RS15
C150	J – 5	0.1	–
C151	J – 5	0.068	–
C152	I – 5	ELECT 10	–
C153	I – 5	0.003	–
C154	I – 5	0.1	–
C155	I – 5	ELECT 10	–
C156	I – 5	560P	–
C157	I – 6	0.1	–
C158	I – 4	ELECT 1	–
C315	F – 6	ELECT 10	–
C316	F – 6	ELECT 10	–
C317	F – 6	ELECT 10	–
D004	H – 14	MA-110	–
D150	I – 4	MA-110	–
IC150	I – 4	MC144143	–
L150	I – 5	10uH	0
Q151	I – 6	2SD601A	–
R071	G – 12	1K	–
R093	F – 12	100K	–
R150	I – 4	100K	–
R151	I – 5	1K	–
R152	I – 5	1K	–
R153	J – 5	6.8K	–
R154	I – 5	470	–
R155	I – 6	1K	–
R157	I – 6	10K	–
R158	I – 6	10K	–
R159	F – 5	1K	–
R160	F – 5	1K	–
R161	F – 6	1K	–
R162	H – 5	4.7K	–
R163	H – 5	4.7K	–
R164	H – 5	4.7K	–
R165	I – 4	4.7K	–

– : NOT MOUNT

• M BOARD WAVEFORMS

① E021 2.0Vp-p (H)	② 1.3 Vp-p (H)	③ 5 Vp-p (H)
④ 4.8 Vp-p (H)	⑤ 4.8 Vp-p (H)	⑥ 1.6 Vp-p (H)
⑦ 1.6 Vp-p (H)	⑧ 5.6 Vp-p (H)	⑨ 4.4 Vp-p (H)
⑩ 1.8 Vp-p (V)	⑪ 1.4 Vp-p (V)	⑫ 2.5 Vp-p (V)
⑬ 5 Vp-p (V)	⑭ 5.3p-p(4.17MHz)	

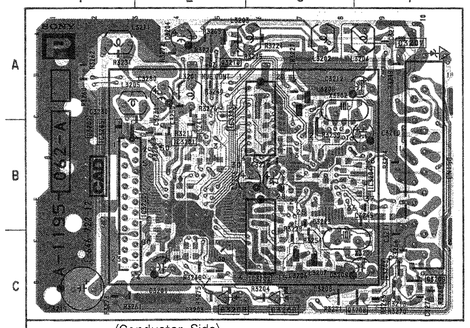
P [PICTURE IN PICTURE] **H** [USER CONTROL]

– P BOARD – (Component Side)

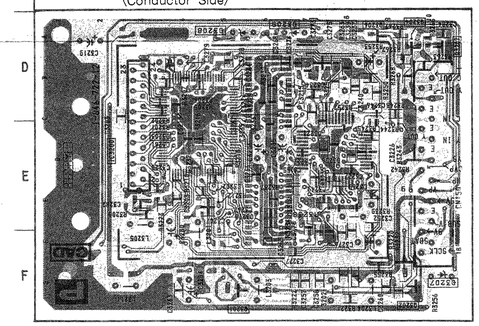
IC	
IC3200	B – 1, E – 1
IC3201	B – 1
IC3202	C – 3
IC3203	A – 3
IC3204	B – 3
IC3205	B – 1

TRANSISTOR	
Q3201	F – 2
Q3202	F – 4
Q3203	C – 4
Q3204	D – 4
Q3206	D – 4
Q3207	D – 4
Q3208	C – 4
Q3209	C – 9
Q3210	A – 2

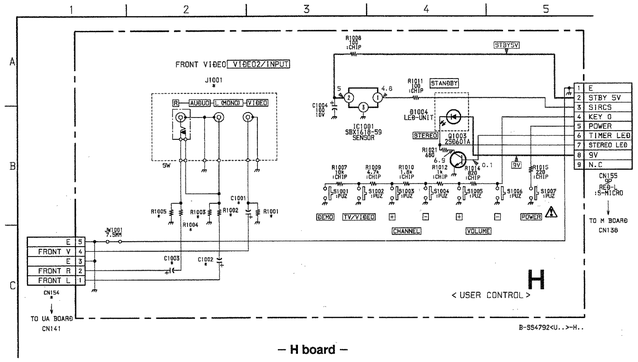
DIODE	
D3202	B – 1
D3203	D – 2
D3208	C – 2, D – 2
D3209	C – 3, D – 3



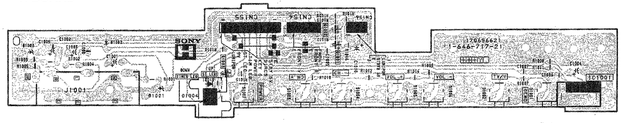
(Conductor Side)



Note :
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.



– H BOARD –



– H board –

Ref	LOCATION	KV-27S10 / 27S15 KV-29RS10 / 29RS15	KV-32S10 / 32S15
C1001	B – 2	–	22 25V
C1002	C – 2	–	1
C1003	C – 2	–	1
CN154	C – 1	–	5P
J1001	A – 2	–	3P
R1001	B – 3	–	75
R1002	B – 2	–	4.7K
R1003	B – 2	–	470K
R1004	B – 2	–	4.7K
R1005	B – 2	–	470K

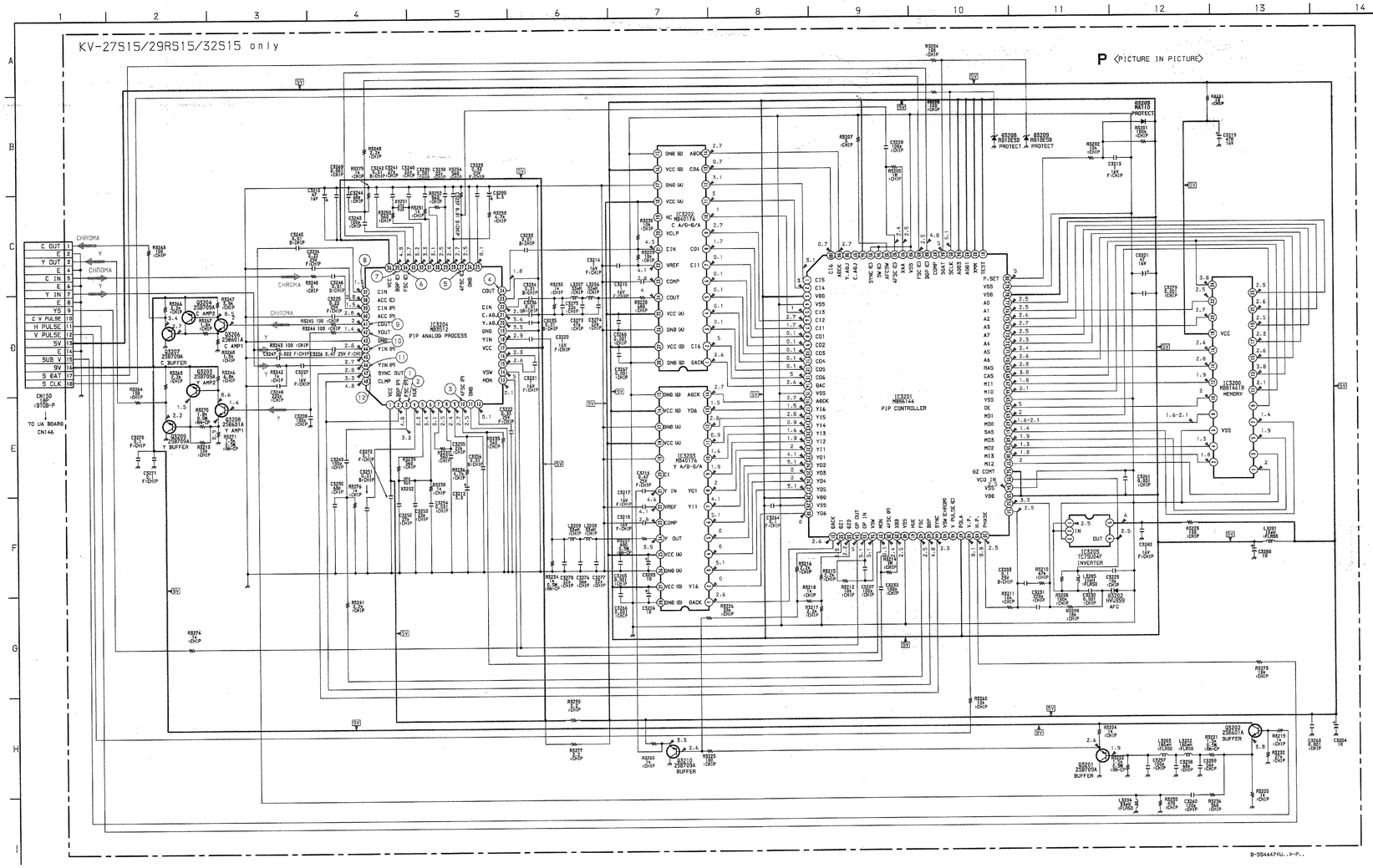
– : NOT MOUNT

• P BOARD WAVEFORMS

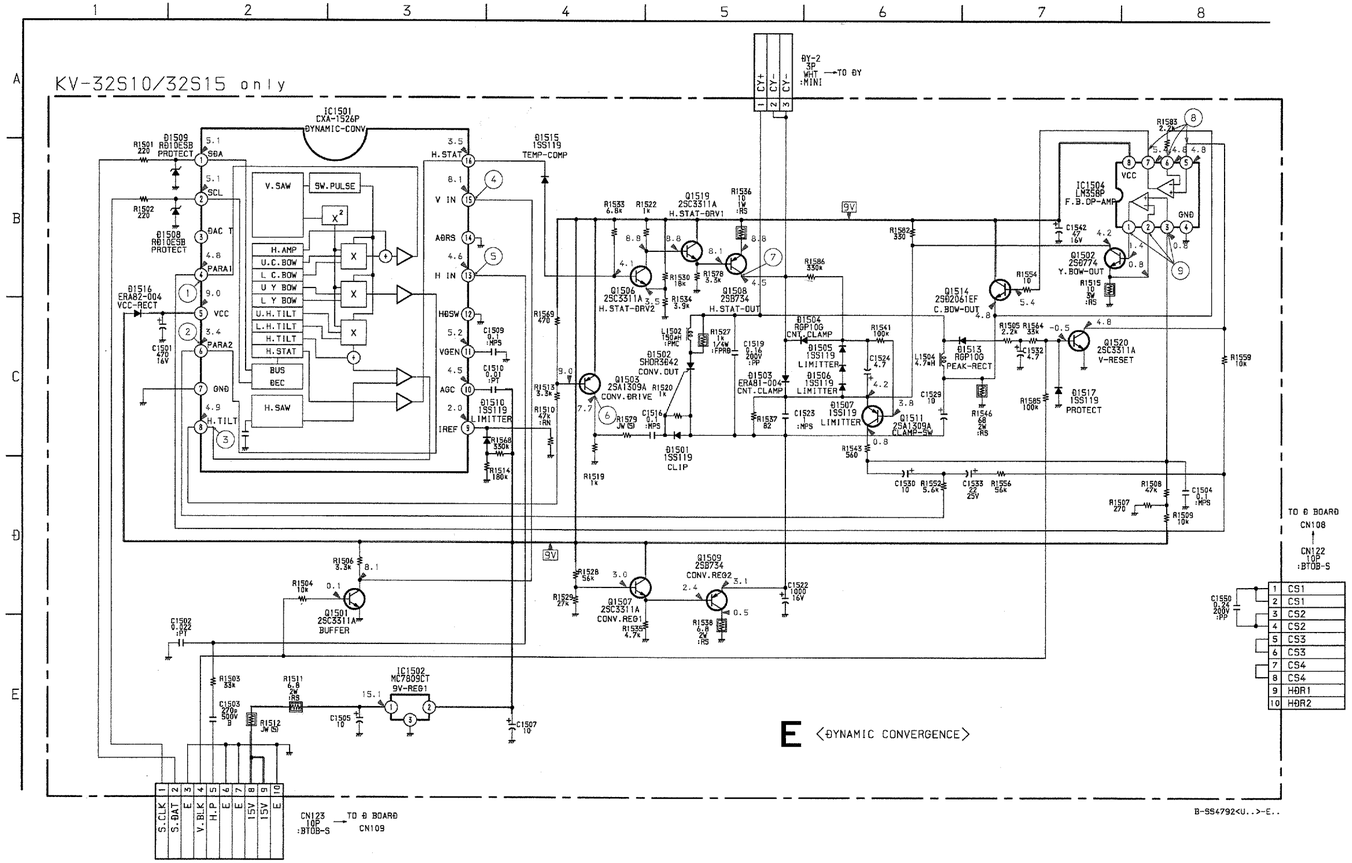
① 5.2 Vp-p (H)	② 1.2Vp-p(3.58MHz)	③ 3.6Vp-p (14.32MHz)
④ 0.8 Vp-p (H)	⑤ 3.5Vp-p(4.3MHz)	⑥ 1.2Vp-p(3.58MHz)
⑦ 5.2 Vp-p (H)	⑧ 1 Vp-p (H)	⑨ 0.7 Vp-p (H)
⑩ E021 1.3 Vp-p (H)	⑪ E021 1 Vp-p (H)	⑫ 5 Vp-p (H)

KV-27S15/29RS15/32S15 only

P <PICTURE IN PICTURE>



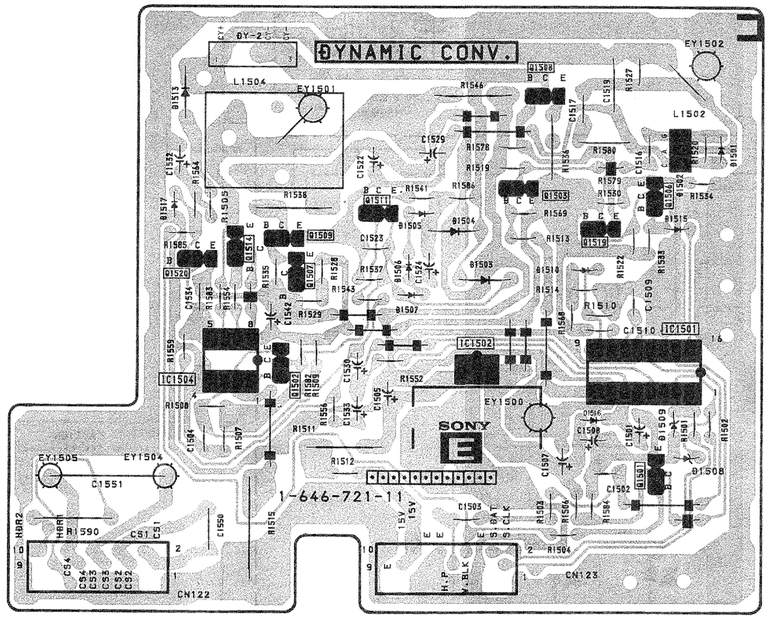
KV-27S10/27S15/29RS10
RM-Y116 RM-Y121 RM-Y116
KV-29RS15/32S10/32S15
RM-Y121 RM-Y116 RM-Y121



E [DYNAMIC CONVERGENCE]

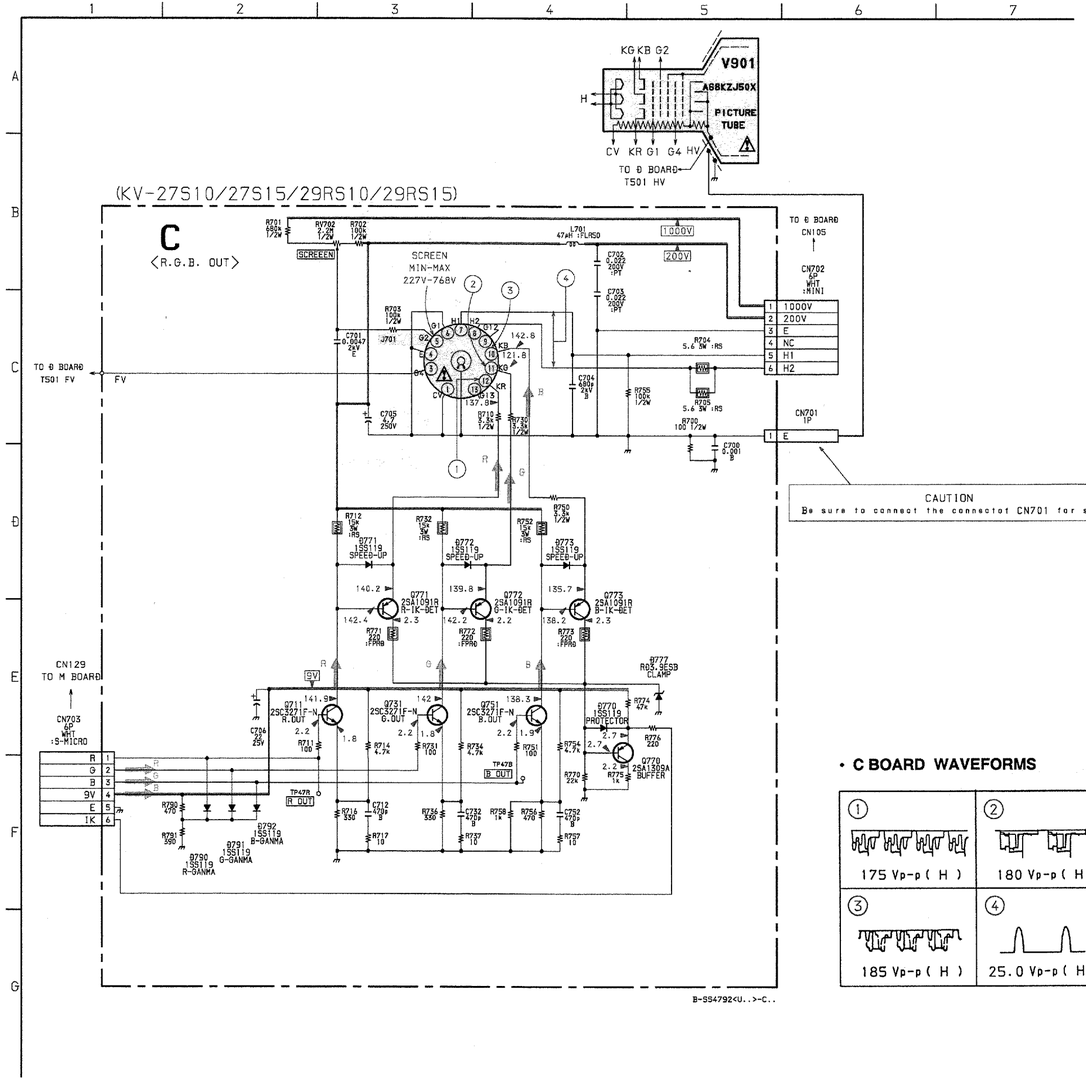
– E BOARD –

(KV-32S10/32S15 only)



• E BOARD WAVEFORMS

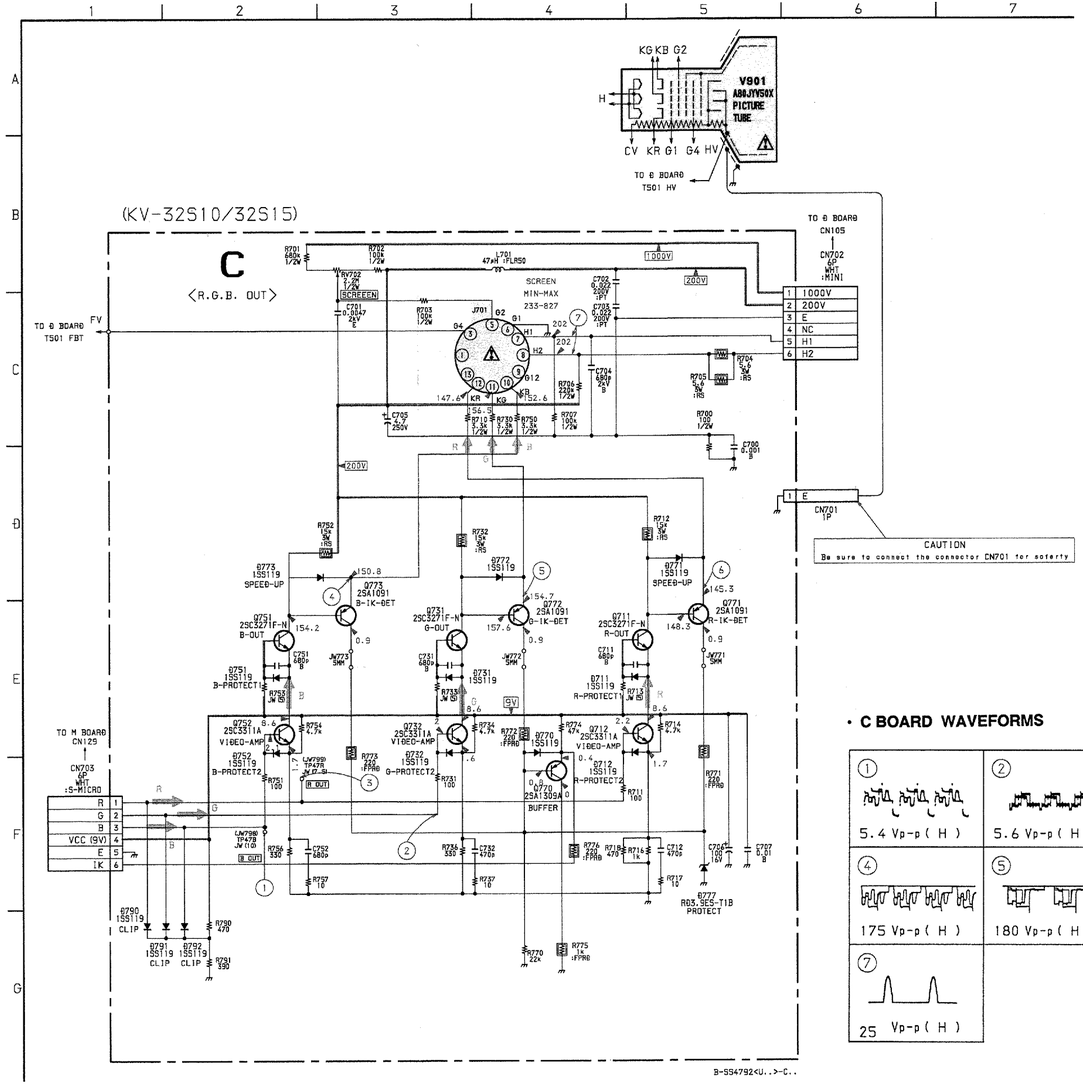
① 1.2 Vp-p (V)	② 2.6 Vp-p (V)	③ 9.2 Vp-p (H)
④ 9.2 Vp-p (V)	⑤ 1.6 Vp-p (H)	⑥ 4.4 Vp-p (H)
⑦ 2.2 Vp-p (V)	⑧ 1 Vp-p (V)	⑨ 2 Vp-p (V)



• C BOARD WAVEFORMS

① 175 Vp-p (H)	② 180 Vp-p (H)
③ 185 Vp-p (H)	④ 25.0 Vp-p (H)

KV-27S10/27S15/29RS10
RM-Y116 RM-Y121 RM-Y116
KV-29RS15/32S10/32S15
RM-Y121 RM-Y116 RM-Y121

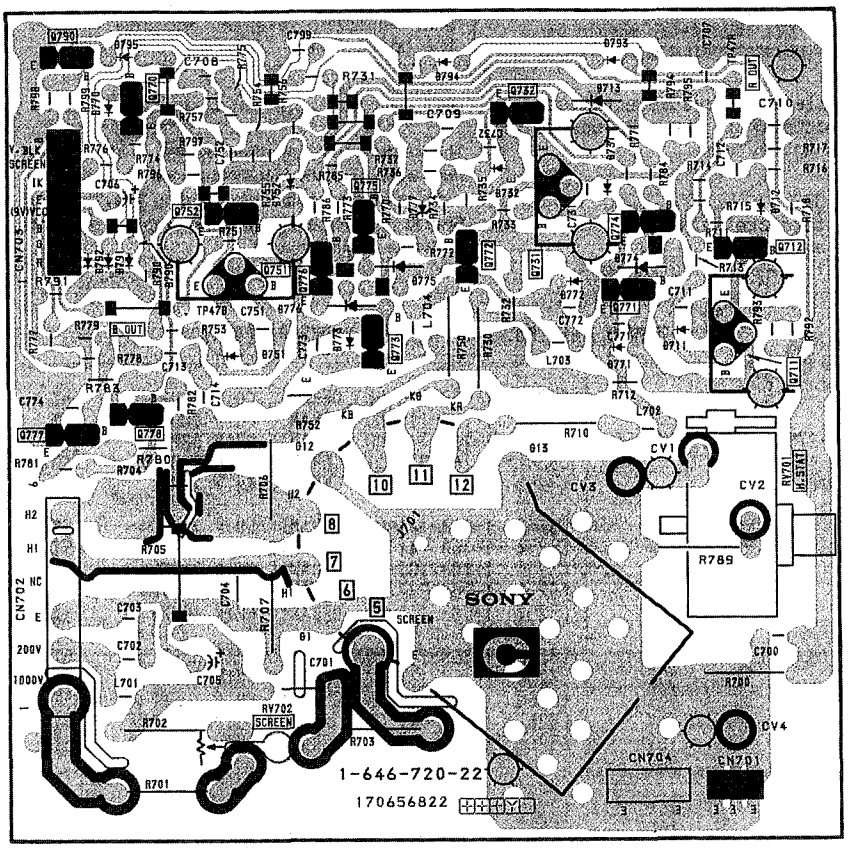


• C BOARD WAVEFORMS

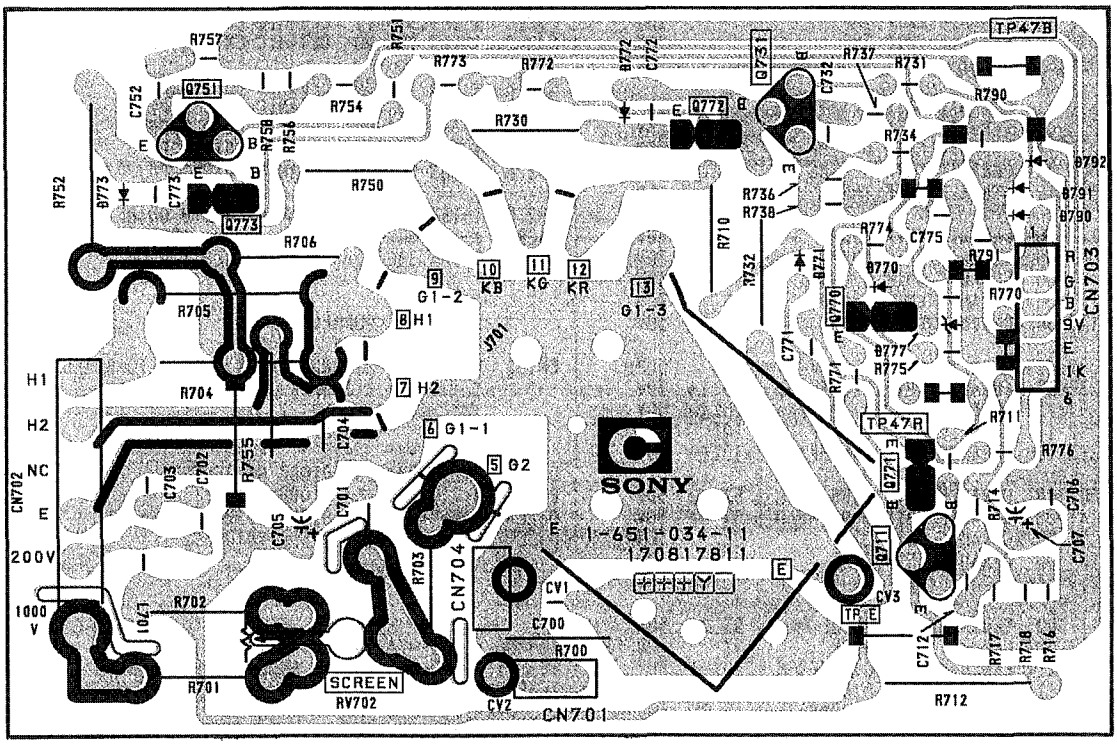
① 5.4 Vp-p (H)	② 5.6 Vp-p (H)	③ 5.6 Vp-p (H)
④ 175 Vp-p (H)	⑤ 180 Vp-p (H)	⑥ 185 Vp-p (H)
⑦ 25 Vp-p (H)		

C [R. G. B. OUT]

– C BOARD – (KV-32S10/32S15)



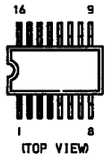
– C BOARD – (KV-27S10/27S15/29RS10/29RS15)



KV-27S10/27S15/29RS10
RM-Y116 RM-Y121 RM-Y116
KV-29RS15/32S10/32S15
RM-Y121 RM-Y116 RM-Y121

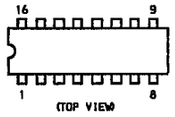
6-5. SEMICONDUCTORS

BU4053BF
CXA1315M

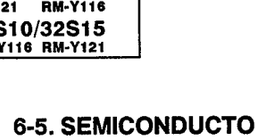


CXA1213BS
CXA1465AS
CXA1545AS

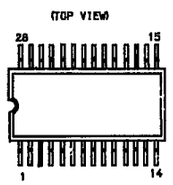
CXA1526P
MB40176PF-G-BNÐ-EF



CXP80424-SV4782
CXP80424-SV4789
CXP85228-SV4745



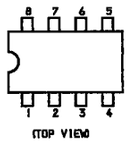
CXP80424-077S



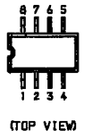
ÐM-48
PM-38
PM-39

MARKING SIDE VIEW

LM358P
ST24C02AB1
ST24C01B1
µPC358C
µPC393C
24C02A1/P



LM358PS
MM1114XFF
MM1118XFF



LM7805CT
LM7812CT
MC7809CT
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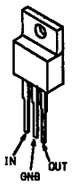

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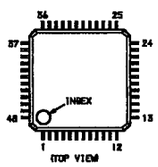

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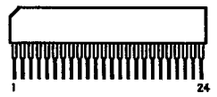

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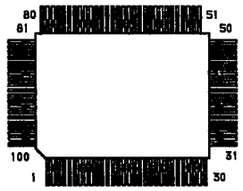

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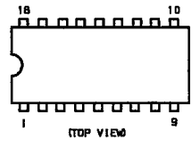

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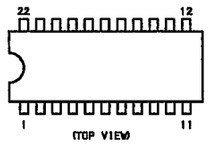

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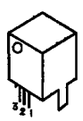
SBX1618-51



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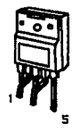

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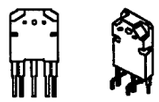

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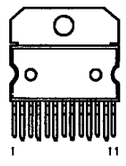

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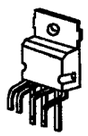

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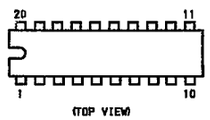

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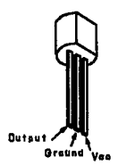

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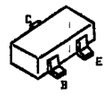
2SC2551-O

2SA1162G
2SB709A
2SÐ601A



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2SC2785-HFE
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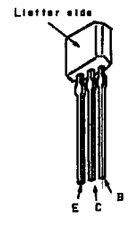

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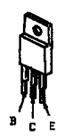
2SB1370-EF
2SC3298A-Y
2SC4159-E
2SC4793
2SÐ2012
2SÐ2061



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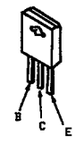
2SB734
2SC3733
2SÐ774

2SC2611
2SC2688-LK
2SC3271F-N

2SC4834MNP



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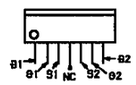
2SC4927-02



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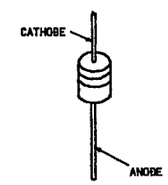
ERA82-004TP
ERA83-006
ERA85-009
RÐ10ESB
RÐ10ESB1
RÐ10ESB2
RÐ12ESB3
RÐ13ESB2
RÐ3.3ESB2
RÐ3.9ESB2
RÐ33ESB1
RÐ39ESB4
RÐ5.1ESB
RÐ5.1ESB1
RÐ6.2ESB2
RÐ8.2ESB3
RÐ9.1ESB1
RÐ9.1ESL
1SS119



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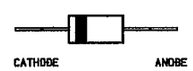
Ð2S4MTA1



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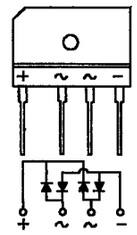

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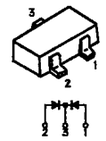

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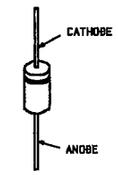
GP08Ð
RGP02-17EL-6433
RGP10GPKG3
RGP10GPKG23
1SS83



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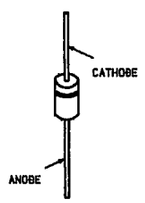
ERA83-006
ERC06-15S
S2L20UF
S3V10SS



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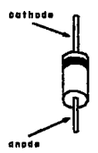
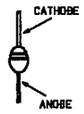
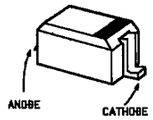


ES1F-LF-G2

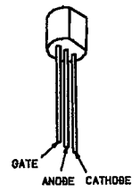
GP08ÐPKG3



HVU359TRF
MA110
1T33



SHOR3Ð42



SECTION 7
EXPLODED VIEWS

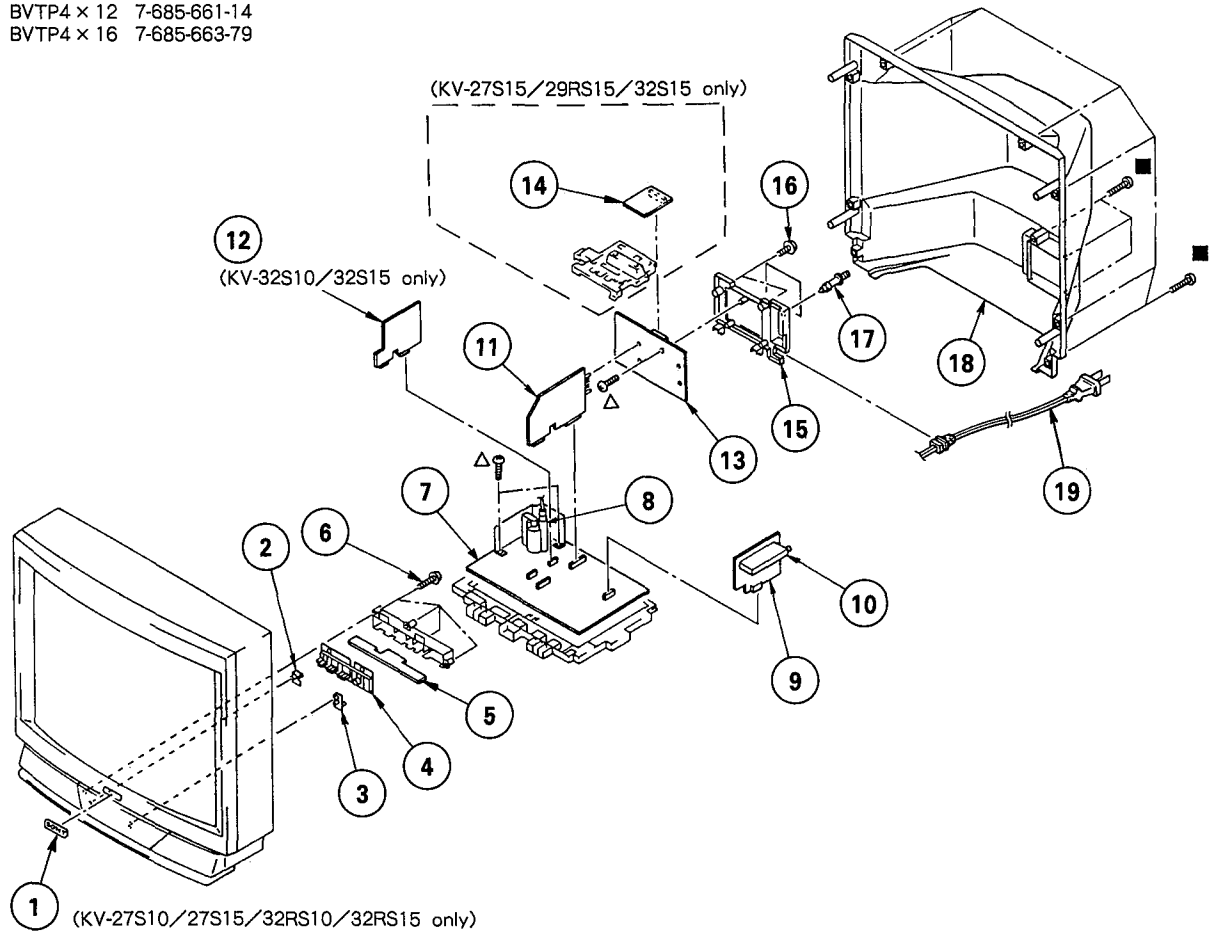
NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite
Ne les remplacer que par une piece portant le numero specifie.

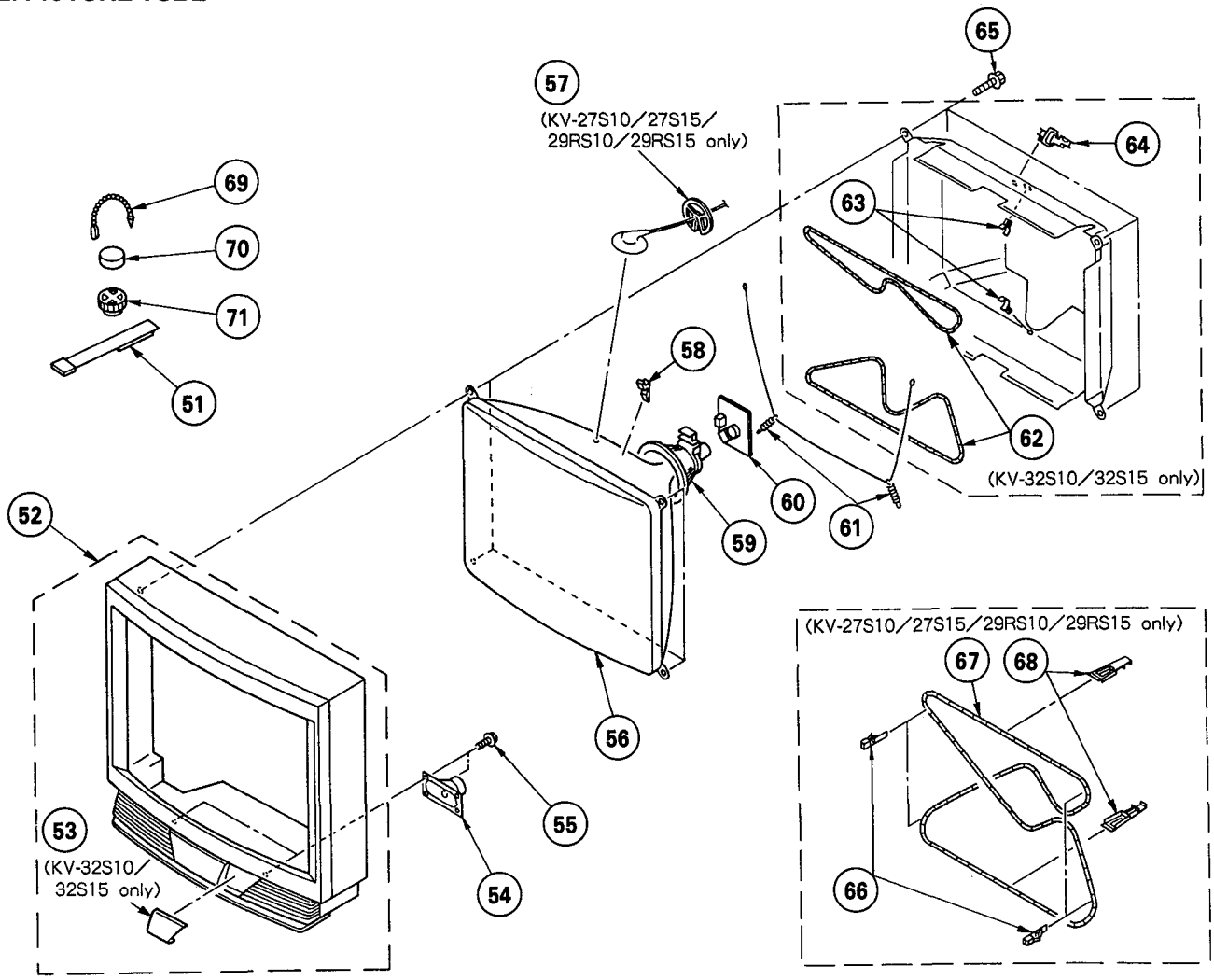
7-1. CHASSIS

△ : BVTP4 × 12 7-685-661-14
■ : BVTP4 × 16 7-685-663-79



REF.NO.	PART NO.	DESCRIPTION	REMARK
1	4-394-048-01	EMBLEM (NO.9), SONY	
2	4-039-458-01	FILTER, REMOTE	
3	4-039-457-21	GUIDE, LED	
4	4-043-303-01	BUTTON, MULTI	
5	*1-646-717-11	H BOARD	
6	4-319-520-11	SCREW, SPECIAL (+PW4X30)	
7	*A-1346-192-A	D BOARD, COMPLETE (KV-27S10/27S15/29RS10/29RS15)	
	*A-1346-193-A	D BOARD, COMPLETE (KV-32S10/32S15)	
8	⚠1-453-146-21	TRANSFORMER ASSY, FLYBACK (NX-A2604A3) (KV-27S10/27S15)	
	⚠1-453-416-11	TRANSFORMER ASSY, FLYBACK (NX-2604A3) (KV-29RS10/29RS15/32S10/32S15)	
9	*A-1297-221-A	A BOARD, COMPLETE	
10	⚠8-598-254-00	TUNER BTF-WA402	
11	*A-1306-454-A	M BOARD, COMPLETE (KV-27S10/27S15/32S10/32S15)	
	*A-1306-462-A	M BOARD, COMPLETE (KV-29RS10/29RS15)	
12	*A-1341-622-A	E BOARD, COMPLETE (KV-32S10/32S15)	
13	*A-1394-526-A	UA BOARD, COMPLETE (KV-27S15/29RS15)	
	*A-1394-527-A	UA BOARD, COMPLETE (KV-32S15)	
	*A-1394-543-A	UA BOARD, COMPLETE (KV-27S10/29RS10)	
	*A-1394-544-A	UA BOARD, COMPLETE (KV-32S10)	
14	*A-1195-062-A	P BOARD, COMPLETE (KV-27S15/29RS15/32S15)	
15	4-039-524-01	PANEL, ANTENNA TERMINAL	
16	4-382-854-11	SCREW (M3X10), P, SW (+)	
17	1-573-657-11	PLUG, F-PIN	
18	4-039-463-01	COVER, REAR (KV-27S10/27S15/29RS10/29RS15)	
	4-039-634-11	COVER, REAR (KV-32S10/32S15)	
19	⚠1-751-059-11	CORD, POWER (WITH CONNECTOR) 10A/125V	

7-2. PICTURE TUBE



The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie

REF.NO.	PART NO.	DESCRIPTION	REMARK
51	X-4306-312-0	PERMALLOY ASSY, CONVERGENCE	
52	X-4031-657-1	BEZNET ASSY (KV-32S15)	53
	X-4031-657-2	BEZNET ASSY (KV-32S10)	53
	4-043-224-01	BEZNET (KV-27S15/29RS15)	
	4-043-224-11	BEZNET (KV-27S10/29RS10)	
53	4-043-221-01	PANEL, CONTROL (KV-32S10)	
	4-043-222-01	LID, CONTROL (KV-32S15)	
54	1-504-531-11	SPEAKER (13.1X6.2CM)	
55	4-388-477-01	SCREW(3X16),TAPPING,+BV WASHER	
56	⚠8-733-723-05	PICTURE TUBE(A80JYY50X)(KV-32S10/32S15)	
	⚠8-733-848-05	PICTURE TUBE (A68KZJ50X) (KV-27S10/27S15/29RS10/29RS15)	
57	3-704-372-31	HOLDER, HV CABLE (KV-27S10/27S15/29RS10/29RS15)	
58	4-041-361-01	SPACER, DY	
59	⚠8-451-275-42	DEFLECTION YOKE Y28PFA(VTM) (KV-27S10/27S15/29RS10/29RS15)	
	⚠8-451-315-41	DEFLECTION YOKE Y34FXA(VTM) (KV-32S10/32S15)	
60	*A-1331-327-A	C BOARD, COMPLETE (KV-27S10/27S15/29RS10/29RS15)	
	*A-1331-351-A	C BOARD, COMPLETE (KV-32S10/32S15)	
61	4-036-329-01	SPRING (B), TENSION	
62	⚠1-402-952-12	COIL, DEMAGNETIZATION (KV-32S10/32S15)	
63	*4-371-629-01	STOPPER, WIRE (KV-32S10/32S15)	
64	4-033-681-01	HOLDER, LEAD (KV-32S10/32S15)	
65	4-041-268-01	SCREW (7), TAPPING	
66	4-040-388-01	HOLDER (S), DGC (KV-27S10/27S15/29RS10/29RS15)	
67	⚠1-406-726-22	COIL, DEMAGNETIZATION (KV-27S10/27S15/29RS10/29RS15)	
68	4-040-387-01	HOLDER (M), DGC (KV-27S10/27S15/29RS10/29RS15)	
69	4-308-870-00	CLIP, LEAD WIRE	
70	1-452-032-00	MAGNET ,DISK; 10MMφ	
71	1-452-094-00	MAGNET ,ROTATABLE DISK; 15MMφ	

P (KV-27S15/29RS15/32S15)

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite
Ne les remplacer que par une piece portant le numero specifie.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation Should replacement be required, replace only with the value originally used

REF.NO.	PART NO.	DESCRIPTION		REMARK
*A-1195-062-A	P BOARD, COMPLETE ********** (KV-27S15/29RS15/32S15)			
	<CAPACITOR>			
C3201	1-124-477-11	ELECT 47MF	20%	16V
C3203	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C3204	1-124-907-11	ELECT 10MF	20%	50V
C3205	1-124-907-11	ELECT 10MF	20%	50V
C3206	1-124-907-11	ELECT 10MF	20%	50V
C3207	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C3208	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C3209	1-126-962-11	ELECT 3.3MF	20%	50V
C3210	1-124-477-11	ELECT 47MF	20%	16V
C3212	1-126-962-11	ELECT 3.3MF	20%	50V
C3213	1-164-346-11	CERAMIC CHIP 1MF		16V
C3214	1-164-346-11	CERAMIC CHIP 1MF		16V
C3215	1-164-346-11	CERAMIC CHIP 1MF		16V
C3216	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C3217	1-164-346-11	CERAMIC CHIP 1MF		16V
C3218	1-164-346-11	CERAMIC CHIP 1MF		16V
C3219	1-126-103-11	ELECT 470MF	20%	16V
C3220	1-164-346-11	CERAMIC CHIP 1MF		16V
C3221	1-164-346-11	CERAMIC CHIP 1MF		16V
C3222	1-164-336-11	CERAMIC CHIP 0.33MF		25V
C3223	1-164-336-11	CERAMIC CHIP 0.33MF		25V
C3224	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C3225	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C3226	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C3227	1-164-346-11	CERAMIC CHIP 1MF		16V
C3228	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C3229	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C3230	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C3231	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C3232	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C3233	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C3234	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C3235	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C3236	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C3237	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C3238	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C3239	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C3240	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C3241	1-163-103-00	CERAMIC CHIP 27PF	5%	50V
C3242	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C3243	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C3244	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C3245	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C3246	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C3247	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C3248	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C3249	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C3250	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C3251	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C3252	1-163-103-00	CERAMIC CHIP 27PF	5%	50V
C3253	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C3254	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C3255	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C3256	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C3257	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C3258	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C3259	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C3260	1-163-119-00	CERAMIC CHIP 120PF	5%	50V
C3261	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C3263	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C3264	1-165-319-11	CERAMIC CHIP 0.1MF		50V
C3265	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C3266	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C3267	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C3268	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C3269	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C3270	1-165-319-11	CERAMIC CHIP 0.1MF		50V
C3271	1-165-319-11	CERAMIC CHIP 0.1MF		50V
C3272	1-165-319-11	CERAMIC CHIP 0.1MF		50V
C3273	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C3274	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C3275	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C3276	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C3277	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C3278	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C3279	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C3280	1-124-907-11	ELECT 10MF	20%	50V
C3282	1-164-346-11	CERAMIC CHIP 1MF		16V
	<CONNECTOR>			
CN150	1-573-297-21	CONNECTOR, BOARD TO BOARD 18P		
	<DIODE>			
D3202	8-719-031-68	DIODE HVU359TRF		
D3203	8-719-404-46	DIODE MA110		
D3208	8-719-110-17	DIODE RD10ESB2		
D3209	8-719-110-17	DIODE RD10ESB2		
	<IC>			
IC3200	8-759-971-56	IC MB81461B-12RS-PSZ		
IC3201	8-759-093-29	IC MB86144BPF-G-BND		
IC3202	8-759-093-28	IC MB40176PF-G-BND-EF		
IC3203	8-759-093-28	IC MB40176PF-G-BND-EF		
IC3204	8-759-093-26	IC MB3512PFQ-G-BND-EF		

P (KV-27S15/29RS15/32S15) A

REF.NO.	PART NO.	DESCRIPTION				REMARK
IC3205	8-759-243-19	IC TC7SU04F				
		<COIL>				
L3201	1-410-470-11	INDUCTOR	10UH			
L3202	1-408-424-00	INDUCTOR	180UH			
L3203	1-408-424-00	INDUCTOR	180UH			
L3204	1-410-476-11	INDUCTOR	33UH			
L3205	1-410-470-11	INDUCTOR	10UH			
L3206	1-410-387-11	INDUCTOR	33UH			
L3207	1-410-387-11	INDUCTOR	33UH			
L3208	1-410-387-11	INDUCTOR	33UH			
L3209	1-410-387-11	INDUCTOR	33UH			
		<TRANSISTOR>				
Q3201	8-729-216-22	TRANSISTOR 2SA1162-G				
Q3202	8-729-422-27	TRANSISTOR 2SD601A-Q				
Q3203	8-729-216-22	TRANSISTOR 2SA1162-G				
Q3204	8-729-216-22	TRANSISTOR 2SA1162-G				
Q3206	8-729-422-27	TRANSISTOR 2SD601A-Q				
Q3207	8-729-216-22	TRANSISTOR 2SA1162-G				
Q3208	8-729-422-27	TRANSISTOR 2SD601A-Q				
Q3209	8-729-216-22	TRANSISTOR 2SA1162-G				
Q3210	8-729-216-22	TRANSISTOR 2SA1162-G				
		<RESISTOR>				
R3201	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R3202	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3203	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3204	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3205	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R3207	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R3208	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R3209	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R3210	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R3211	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3212	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3213	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R3214	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R3215	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3216	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3217	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3218	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3219	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3220	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3221	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R3222	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R3223	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3224	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3225	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3226	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R3227	1-216-647-11	METAL CHIP	680	0.50%	1/10W	
R3228	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R3229	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3230	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3231	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R3232	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R3233	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3234	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R3235	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3236	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R3237	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3238	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3239	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3241	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3242	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3243	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3244	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3245	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3246	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R3247	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R3248	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R3249	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3250	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3251	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3252	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3253	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R3254	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3255	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R3256	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R3259	1-216-298-00	METAL GLAZE	2.2	5%	1/10W	
R3260	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3263	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3264	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R3265	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3266	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3267	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R3268	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R3269	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R3270	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W	
R3271	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W	
R3273	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R3274	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3275	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3276	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R3277	1-216-298-00	METAL GLAZE	2.2	5%	1/10W	
		<CRYSTAL>				
X3201	1-567-878-11	VIBRATOR, CRYSTAL				
X3202	1-567-878-11	VIBRATOR, CRYSTAL				

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	*A-1297-221-A	A BOARD, COMPLETE				
		**********				
		<CAPACITOR>				
C173	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C174	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C175	1-126-935-11	ELECT	470MF	20%	16V	
C176	1-126-935-11	ELECT	470MF	20%	16V	
C177	1-126-964-11	ELECT	10MF	20%	50V	
C178	1-126-933-11	ELECT	100MF	20%	16V	
C179	1-124-916-11	ELECT	22MF	20%	25V	
C181	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V	
		<CONNECTOR>				
CN103	*1-564-519-11	PLUG, CONNECTOR 4P				
CN151	1-573-979-21	CONNECTOR, BOARD TO BOARD 11P				
CN152	1-750-394-11	PIN, CONNECTOR (STAKING) 32P				
CN164	1-564-505-11	PLUG, CONNECTOR 2P				
CN165	1-564-505-11	PLUG, CONNECTOR 2P				
CN208	1-564-510-11	PLUG, CONNECTOR 7P				

A **M**

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<DIODE>				
D170	8-719-110-76	DIODE RD33ESB1				
		<COIL>				
L170	1-408-408-00	INDUCTOR	8.2UH			
L171	1-408-408-00	INDUCTOR	8.2UH			
L172	1-408-408-00	INDUCTOR	8.2UH			
		<RESISTOR>				
R170	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R174	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R176	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R177	1-215-900-11	METAL OXIDE	22K	5%	2W	F
R179	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R187	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R193	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R196	1-216-037-00	METAL GLAZE	330	5%	1/10W	
		<TUNER>				
TU101⚠	8-598-254-00	TUNER BTF-WA402				
**********						
	*A-1306-454-A	M BOARD, COMPLETE				
		**********				
		(KV-27S10/27S15/32S10/32S15)				
	*A-1306-462-A	M BOARD, COMPLETE (KV-29RS10/29RS15)				
		**********				
		<CAPACITOR>				
C002	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V	
C003	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C005	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C006	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C007	1-124-903-11	ELECT	1MF	20%	50V	
C008	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C009	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C010	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C012	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C013	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C014	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C015	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C016	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C017	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C018	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C019	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C021	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C022	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C023	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C025	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C028	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C029	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C032	1-124-902-00	ELECT	0.47MF	20%	50V	
C033	1-126-933-11	ELECT	100MF	20%	10V	
C034	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
		(KV-27S10/27S15/32S10/32S15)				
C035	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
		(KV-27S10/27S15/32S10/32S15)				
C041	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C043	1-163-159-00	CERAMIC CHIP	12PF	2%	50V	
C045	1-126-940-11	ELECT	330MF	20%	16V	
C047	1-104-896-11	CERAMIC CHIP	24PF	2%	50V	
C048	1-126-964-11	ELECT	10MF	20%	50V	
C049	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C050	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C051	1-163-031-11	CERAMIC CHIP	0.01MF		50V	
C052	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C053	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C054	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C055	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C056	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C057	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C058	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V	
C059	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C060	1-124-903-11	ELECT	1MF	20%	50V	
C062	1-126-964-11	ELECT	10MF	20%	50V	
C150	1-136-165-00	FILM	0.1MF	5%	50V	
		(KV-27S10/27S15/32S10/32S15)				
C151	1-136-175-00	FILM	0.068MF	5%	50V	
		(KV-27S10/27S15/32S10/32S15)				
C152	1-126-964-11	ELECT	10MF	20%	50V	
		(KV-27S10/27S15/32S10/32S15)				
C153	1-137-367-11	FILM	0.0033MF	5%	50V	
		(KV-27S10/27S15/32S10/32S15)				
C154	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
		(KV-27S10/27S15/32S10/32S15)				
C155	1-126-964-11	ELECT	10MF	20%	50V	
		(KV-27S10/27S15/32S10/32S15)				
C156	1-163-135-00	CERAMIC CHIP	560PF	5%	50V	
		(KV-27S10/27S15/32S10/32S15)				
C157	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
		(KV-27S10/27S15/32S10/32S15)				
C158	1-124-903-11	ELECT	1MF	20%	50V	
		(KV-27S10/27S15/32S10/32S15)				
C160	1-124-903-11	ELECT	1MF	20%	50V	
C201	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C202	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C203	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V	
C204	1-126-933-11	ELECT	100MF	20%	16V	
C205	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C211	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V	
C212	1-124-902-00	ELECT	0.47MF	20%	50V	
C213	1-124-902-00	ELECT	0.47MF	20%	50V	
C214	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C216	1-104-665-11	ELECT	100MF	20%	25V	
C301	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C305	1-126-964-11	ELECT	10MF	20%	50V	
C306	1-124-902-00	ELECT	0.47MF	20%	50V	
C307	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C308	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C310	1-124-916-11	ELECT	22MF	20%	25V	
C311	1-124-903-11	ELECT	1MF	20%	50V	
C313	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C315	1-126-964-11	ELECT	10MF	20%	50V	
		(KV-27S10/27S15/32S10/32S15)				
C316	1-126-964-11	ELECT	10MF	20%	50V	
		(KV-27S10/27S15/32S10/32S15)				
C317	1-126-964-11	ELECT	10MF	20%	50V	
		(KV-27S10/27S15/32S10/32S15)				
C318	1-136-165-00	FILM	0.1MF	5%	50V	
C319	1-136-165-00	FILM	0.1MF	5%	50V	
C320	1-136-165-00	FILM	0.1MF	5%	50V	
C321	1-126-952-11	ELECT	1000MF	20%	16V	
C322	1-136-153-00	FILM	0.01MF	5%	50V	

REF.NO.	PART NO.	DESCRIPTION				REMARK
C323	1-126-923-11	ELECT	220MF	20%	10V	
C324	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C325	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V	
C326	1-136-169-00	FILM	0.22MF	5%	50V	
C327	1-136-169-00	FILM	0.22MF	5%	50V	
C328	1-124-902-00	ELECT	0.47MF	20%	50V	
C329	1-124-903-11	ELECT	1MF	20%	50V	
C330	1-126-964-11	ELECT	10MF	20%	50V	
C332	1-164-489-11	CERAMIC CHIP	0.22MF	10%	16V	
C333	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V	
C334	1-124-902-00	ELECT	0.47MF	20%	50V	
C335	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C336	1-124-903-11	ELECT	1MF	20%	50V	
C337	1-124-902-00	ELECT	0.47MF	20%	50V	
C338	1-136-153-00	FILM	0.01MF	5%	50V	
C340	1-124-903-11	ELECT	1MF	20%	50V	
C341	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C342	1-137-414-11	FILM	0.0047MF	10%	100V	
		<CONNECTOR>				
CN129	*1-564-521-11	PLUG, CONNECTOR 6P				
CN130	1-573-301-21	CONNECTOR, BOARD TO BOARD 20P				
CN131	*1-691-914-11	CONNECTOR, BOARD TO BOARD 15P				
CN134	*1-564-521-11	PLUG, CONNECTOR 6P				(KV-27S10/27S15/32S10/32S15)
CN137	1-750-394-11	PIN, CONNECTOR (STAKING) 32P				
CN138	*1-564-512-11	PLUG, CONNECTOR 9P				
CN163	*1-564-508-11	PLUG, CONNECTOR 5P				(KV-27S10/27S15/32S10/32S15)
CN168	1-564-505-11	PLUG, CONNECTOR 2P				
		<DIODE>				
D001	8-719-404-46	DIODE MA110				
D002	8-719-404-46	DIODE MA110				
D004	8-719-404-46	DIODE MA110				(KV-27S10/27S15/32S10/32S15)
D005	8-713-300-57	DIODE 1T33				
D006	8-719-110-17	DIODE RD10ESB2				
D007	8-719-110-17	DIODE RD10ESB2				
D008	8-719-110-17	DIODE RD10ESB2				
D009	8-719-110-17	DIODE RD10ESB2				
D150	8-719-404-46	DIODE MA110				(KV-27S10/27S15/32S10/32S15)
D201	8-719-404-46	DIODE MA110				
D202	8-719-404-46	DIODE MA110				
D205	8-719-110-17	DIODE RD10ESB2				
D206	8-719-110-17	DIODE RD10ESB2				
D207	8-719-510-48	DIODE D1N20R				
D301	8-719-110-17	DIODE RD10ESB2				
D304	8-719-110-17	DIODE RD10ESB2				
		<IC>				
IC101	8-752-851-01	IC CXP80424-079S				
IC102	8-759-168-37	IC ST24C01B1				
IC103	8-759-805-37	IC L78LR05D-MA				
IC150	8-759-084-28	IC MC144143P1				(KV-27S10/27S15/32S10/32S15)
IC201	8-759-090-21	IC TDA8424				
IC202	8-759-983-69	IC LM358PS				
IC301	8-752-059-67	IC CXA1465AS				

REF.NO.	PART NO.	DESCRIPTION				REMARK
		<COIL>				
L001	1-410-470-11	INDUCTOR	10UH			
L002	1-408-414-00	INDUCTOR	27UH			
L150	1-410-470-11	INDUCTOR	10UH			(KV-27S10/27S15/32S10/32S15)
		<TRANSISTOR>				
Q001	8-729-216-22	TRANSISTOR	2SA1162-G			
Q004	8-729-216-22	TRANSISTOR	2SA1162-G			
Q005	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q151	8-729-422-27	TRANSISTOR	2SD601A-Q			(KV-27S10/27S15/32S10/32S15)
Q201	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q301	8-729-216-22	TRANSISTOR	2SA1162-G			
Q302	8-729-216-22	TRANSISTOR	2SA1162-G			
Q308	8-729-422-27	TRANSISTOR	2SD601A-Q			
		<RESISTOR>				
JR200	1-216-295-00	METAL GLAZE	0	5%	1/10W	
JR201	1-216-295-00	METAL GLAZE	0	5%	1/10W	
JR202	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R002	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R003	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R004	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R005	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R006	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R007	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R008	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R009	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R011	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R012	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R013	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R016	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R017	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R018	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R019	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R020	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R021	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R022	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R023	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R025	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R026	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R027	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R028	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R029	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R030	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R031	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R032	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R033	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R034	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R035	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R036	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R037	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R038	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R039	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R040	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R041	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R042	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R043	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R044	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R045	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R046	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R048	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R049	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R050	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R051	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R052	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R053	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R054	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R055	1-216-033-00	METAL GLAZE	220	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R056	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R057	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R058	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R059	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R060	1-216-079-00	METAL GLAZE	18K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
	1-216-295-00	METAL GLAZE	0	5%	1/10W	(KV-29RS10/29RS15)
R062	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R063	1-216-033-00	METAL GLAZE	220	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R064	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R065	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R066	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R067	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R069	1-216-033-00	METAL GLAZE	220	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R070	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R071	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R074	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R075	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R076	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R078	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R079	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R080	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R082	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R083	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R086	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R087	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R091	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R092	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R093	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R150	1-216-097-00	METAL GLAZE	100K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R151	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R152	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R153	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R154	1-216-041-00	METAL GLAZE	470	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R155	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R156	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R157	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R158	1-216-073-00	METAL GLAZE	10K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R159	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R160	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R161	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R162	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R163	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R164	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R165	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R166	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R168	1-216-049-00	METAL GLAZE	1K	5%	1/10W	(KV-27S10/27S15/32S10/32S15)
R201	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R202	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R203	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R204	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R205	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R206	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R207	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R208	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R209	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R210	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R211	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R212	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R213	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R218	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R219	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R220	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R222	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R223	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R301	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R302	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R303	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R304	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R305	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R306	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R312	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R313	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R321	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R323	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R324	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R327	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W	
R328	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R329	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R330	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R331	1-216-678-11	METAL CHIP	13K	0.50%	1/10W	
R332	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R333	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R334	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R335	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R336	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R337	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R338	1-249-417-11	CARBON	1K	5%	1/4W	F
R339	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R340	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R341	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R342	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R343	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R344	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R345	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R346	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	

The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R347	1-249-409-11	CARBON	220	5%	1/4W	F
R348	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R349	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R351	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R352	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R354	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R356	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R374	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R375	1-216-033-00	METAL GLAZE	220	5%	1/10W	
		<CRYSTAL>				
X001	1-579-917-21	VIBRATOR, CRYSTAL				
X301	1-567-505-11	OSCILLATOR, CRYSTAL				
**********						
	*A-1331-327-A	C BOARD, COMPLETE				
		**********				
		(KV-27S10/27S15/29RS10/29RS15)				
	*A-1331-351-A	C BOARD, COMPLETE (KV-32S10/32S15)				
		**********				
		<CAPACITOR>				
C700	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C701	1-162-114-00	CERAMIC	0.0047MF		2KV	
C702	1-106-375-12	MYLAR	0.022MF		200V	
C703	1-106-375-12	MYLAR	0.022MF		200V	
C704	1-162-116-00	CERAMIC	680PF	10%	2KV	
C705	1-123-946-00	ELECT	4.7MF	20%	250V	
C706	1-124-916-11	ELECT	22MF	20%	25V	
			(KV-27S10/27S15/29RS10/29RS15)			
	1-126-933-11	ELECT	100MF	20%	16V	
					(KV-32S10/32S15)	
C707	1-102-129-00	CERAMIC	0.01MF	10%	50V	
					(KV-32S10/32S15)	
C711	1-164-083-11	CERAMIC	680PF	10%	50V	
					(KV-32S10/32S15)	
C712	1-164-081-11	CERAMIC	470PF	10%	50V	
C731	1-164-083-11	CERAMIC	680PF	10%	50V	
					(KV-32S10/32S15)	
C732	1-164-081-11	CERAMIC	470PF	10%	50V	
C751	1-164-083-11	CERAMIC	680PF	10%	50V	
					(KV-32S10/32S15)	
C752	1-164-081-11	CERAMIC	470PF	10%	50V	
			(KV-27S10/27S15/29RS10/29RS15)			
	1-164-083-11	CERAMIC	680PF	10%	50V	
					(KV-32S10/32S15)	
		<CONNECTOR>				
CN701	1-695-915-11	TAB (CONTACT)				
CN702	1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P				
CN703	*1-564-509-11	PLUG, CONNECTOR 6P				
		<DIODE>				
D711	8-719-911-19	DIODE 1SS119 (KV-32S10/32S15)				
D712	8-719-911-19	DIODE 1SS119 (KV-32S10/32S15)				
D731	8-719-911-19	DIODE 1SS119 (KV-32S10/32S15)				
D732	8-719-911-19	DIODE 1SS119 (KV-32S10/32S15)				
D751	8-719-911-19	DIODE 1SS119 (KV-32S10/32S15)				
D752	8-719-911-19	DIODE 1SS119				
D770	8-719-911-19	DIODE 1SS119				
D771	8-719-911-19	DIODE 1SS119				
D772	8-719-911-19	DIODE 1SS119				
D773	8-719-911-19	DIODE 1SS119				
D777	8-719-109-72	DIODE RD3.9ESB2				
D790	8-719-911-19	DIODE 1SS119				
D791	8-719-911-19	DIODE 1SS119				
D792	8-719-911-19	DIODE 1SS119				
		<JACK>				
J701	⚠1-540-124-11	SOCKET, PICTURE TUBE				
		<COIL>				
L701	1-410-478-11	INDUCTOR	47UH			
		<TRANSISTOR>				
Q711	8-729-326-11	TRANSISTOR 2SC2611				
Q712	8-729-119-78	TRANSISTOR 2SC2785-HFE (KV-32S10/32S15)				
Q731	8-729-326-11	TRANSISTOR 2SC2611				
Q732	8-729-119-78	TRANSISTOR 2SC2785-HFE (KV-32S10/32S15)				
Q751	8-729-326-11	TRANSISTOR 2SC2611				
Q752	8-729-119-78	TRANSISTOR 2SC2785-HFE (KV-32S10/32S15)				
Q770	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q771	8-729-200-17	TRANSISTOR 2SA1091-O				
Q772	8-729-200-17	TRANSISTOR 2SA1091-O				
Q773	8-729-200-17	TRANSISTOR 2SA1091-O				
		<RESISTOR>				
R700	1-247-739-11	CARBON	100	5%	1/2W	
R701	1-244-941-00	CARBON	680K	5%	1/2W	
R702	1-249-496-11	CARBON	100K	5%	1/2W	
R703	1-249-496-11	CARBON	100K	5%	1/2W	
R704	1-216-398-11	METAL OXIDE	5.6	5%	3W	F
R705	1-216-398-11	METAL OXIDE	5.6	5%	3W	F
R707	1-249-496-11	CARBON	100K	5%	1/2W	
					(KV-32S10/32S15)	
R710	1-247-758-31	CARBON	3.3K	5%	1/4W	
					(KV-27S10/27S15/29RS10/29RS15)	
	1-260-105-11	CARBON	3.3K	5%	1/2W	
					(KV-32S10/32S15)	
R711	1-247-807-31	CARBON	100	5%	1/4W	
R712	1-215-924-71	METAL OXIDE	15K	5%	3W	F
R714	1-249-425-11	CARBON	4.7K	5%	1/4W	
R716	1-249-411-11	CARBON	330	5%	1/4W	
					(KV-27S10/27S15/29RS10/29RS15)	
	1-249-417-11	CARBON	1K	5%	1/4W	
					(KV-32S10/32S15)	
R717	1-249-393-11	CARBON	10	5%	1/4W	
R718	1-249-413-11	CARBON	470	5%	1/4W	
					(KV-32S10/32S15)	
R730	1-247-758-31	CARBON	3.3K	5%	1/4W	
					(KV-27S10/27S15/29RS10/29RS15)	
	1-260-105-11	CARBON	3.3K	5%	1/2W	
					(KV-32S10/32S15)	
R731	1-247-807-31	CARBON	100	5%	1/4W	
R732	1-215-924-71	METAL OXIDE	15K	5%	3W	F
R734	1-249-425-11	CARBON	4.7K	5%	1/4W	
R736	1-249-411-11	CARBON	330	5%	1/4W	
R737	1-249-393-11	CARBON	10	5%	1/4W	
R750	1-247-758-31	CARBON	3.3K	5%	1/4W	
					(KV-27S10/27S15/29RS10/29RS15)	
	1-260-105-11	CARBON	3.3K	5%	1/2W	
					(KV-32S10/32S15)	

C E (KV-32S10/32S15)

REF.NO.	PART NO.	DESCRIPTION				REMARK
R751	1-247-807-31	CARBON	100	5%	1/4W	
R752	1-215-924-71	METAL OXIDE	15K	5%	3W	F
R754	1-249-425-11	CARBON	4.7K	5%	1/4W	
R755	1-247-758-31	CARBON	3.3K	5%	1/4W	
			(KV-27S10/27S15/29RS10/29RS15)			
R756	1-249-411-11	CARBON	330	5%	1/4W	
					(KV-32S10/32S15)	
	1-249-413-11	CARBON	470	5%	1/4W	
			(KV-27S10/27S15/29RS10/29RS15)			
R757	1-249-393-11	CARBON	10	5%	1/4W	
R758	1-249-417-11	CARBON	1K	5%	1/4W	F
			(KV-27S10/27S15/29RS10/29RS15)			
R770	1-249-433-11	CARBON	22K	5%	1/4W	
R771	1-249-409-11	CARBON	220	5%	1/4W	F
R772	1-249-409-11	CARBON	220	5%	1/4W	F
R773	1-249-409-11	CARBON	220	5%	1/4W	F
R774	1-249-437-11	CARBON	47K	5%	1/4W	
R775	1-249-417-11	CARBON	1K	5%	1/4W	F
R776	1-249-409-11	CARBON	220	5%	1/4W	F
R790	1-249-413-11	CARBON	470	5%	1/4W	
R791	1-249-412-11	CARBON	390	5%	1/4W	

<VARIABLE RESISTOR>

RV702	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M

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*A-1341-622-A		E BOARD, COMPLETE (KV-32S10/32S15)
		**********
4-382-854-11		SCREW (M3X10), P, SW (+)

<CAPACITOR>

C1501	1-126-103-11	ELECT	470MF	20%	16V
C1502	1-137-372-11	FILM	0.022MF	5%	50V
C1503	1-102-234-00	CERAMIC	270PF	10%	500V
C1504	1-136-165-00	FILM	0.1MF	5%	50V
C1505	1-124-907-11	ELECT	10MF	20%	50V
C1507	1-124-907-11	ELECT	10MF	20%	50V
C1509	1-136-165-00	FILM	0.1MF	5%	50V
C1510	1-137-370-11	FILM	0.01MF	5%	50V
C1516	1-136-165-00	FILM	0.1MF	5%	50V
C1519	1-136-104-00	FILM	0.16MF	5%	200V
C1522	1-124-360-00	ELECT	1000MF	20%	16V
C1523	1-136-177-00	FILM	1MF	5%	50V
C1524	1-124-927-11	ELECT	4.7MF	20%	50V
C1529	1-124-907-11	ELECT	10MF	20%	50V
C1530	1-124-907-11	ELECT	10MF	20%	50V
C1532	1-124-927-11	ELECT	4.7MF	20%	50V
C1533	1-126-233-11	ELECT	22MF	20%	25V
C1542	1-124-477-11	ELECT	47MF	20%	16V
C1550	1-136-756-11	FILM	0.24MF	5%	200V

<CONNECTOR>

CN122	1-573-299-21	CONNECTOR, BOARD TO BOARD 10P
CN123	1-573-299-21	CONNECTOR, BOARD TO BOARD 10P
DY-2	1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P

REF.NO.	PART NO.	DESCRIPTION	REMARK

<DIODE>

D1501	8-719-911-19	DIODE 1SS119
D1502	8-719-801-35	THYRISTOR SHOR3D42
D1503	8-719-980-78	DIODE ERA83-006
D1504	8-719-302-43	DIODE EL1Z
D1505	8-719-911-19	DIODE 1SS119
D1506	8-719-911-19	DIODE 1SS119
D1507	8-719-911-19	DIODE 1SS119
D1508	8-719-110-17	DIODE RD10ESB2
D1509	8-719-110-17	DIODE RD10ESB2
D1510	8-719-911-19	DIODE 1SS119
D1513	8-719-302-43	DIODE EL1Z
D1515	8-719-911-19	DIODE 1SS119
D1516	8-719-987-87	DIODE ERA85-009
D1517	8-719-911-19	DIODE 1SS119

<IC>

IC1501	8-752-052-88	IC CXA1526P
IC1502	8-759-701-59	IC NJM78M09FA
IC1504	8-759-135-80	IC UPC358C

<COIL>

L1502	1-459-592-11	COIL (WITH CORE) (PMC)
L1504	1-459-474-11	COIL (WITH CORE)

<TRANSISTOR>

Q1501	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1502	8-729-140-96	TRANSISTOR 2SD774-34
Q1503	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q1506	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1507	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1508	8-729-140-93	TRANSISTOR 2SB733-34
Q1509	8-729-140-93	TRANSISTOR 2SB733-34
Q1511	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q1514	8-729-209-15	TRANSISTOR 2SD2012
Q1519	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1520	8-729-119-78	TRANSISTOR 2SC2785-HFE

<RESISTOR>

R1501	1-249-409-11	CARBON	220	5%	1/4W	
R1502	1-249-409-11	CARBON	220	5%	1/4W	
R1503	1-249-435-11	CARBON	33K	5%	1/4W	
R1504	1-249-429-11	CARBON	10K	5%	1/4W	
R1505	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1506	1-249-423-11	CARBON	3.3K	5%	1/4W	
R1507	1-249-410-11	CARBON	270	5%	1/4W	
R1508	1-249-437-11	CARBON	47K	5%	1/4W	
R1509	1-249-429-11	CARBON	10K	5%	1/4W	
R1510	1-215-461-00	METAL	47K	1%	1/4W	
R1511	1-216-379-11	METAL OXIDE	6.8	5%	2W	F
R1513	1-249-423-11	CARBON	3.3K	5%	1/4W	
R1514	1-247-885-00	CARBON	180K	5%	1/4W	
R1515	1-215-905-11	METAL OXIDE	10	5%	3W	F
R1519	1-249-417-11	CARBON	1K	5%	1/4W	
R1520	1-249-417-11	CARBON	1K	5%	1/4W	
R1522	1-249-417-11	CARBON	1K	5%	1/4W	
R1527	1-249-417-11	CARBON	1K	5%	1/4W	F
R1528	1-249-438-11	CARBON	56K	5%	1/4W	
R1529	1-249-434-11	CARBON	27K	5%	1/4W	

The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1530	1-249-432-11	CARBON	18K	5%	1/4W	
R1533	1-249-427-11	CARBON	6.8K	5%	1/4W	
R1534	1-249-424-11	CARBON	3.9K	5%	1/4W	
R1535	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1536	1-215-857-11	METAL OXIDE	10	5%	1W	F
R1537	1-249-404-00	CARBON	82	5%	1/4W	
R1538	1-216-379-11	METAL OXIDE	6.8	5%	2W	F
R1541	1-249-441-11	CARBON	100K	5%	1/4W	
R1543	1-249-414-11	CARBON	560	5%	1/4W	
R1546	1-215-885-00	METAL OXIDE	68	5%	2W	F
R1552	1-249-426-11	CARBON	5.6K	5%	1/4W	
R1554	1-249-393-11	CARBON	10	5%	1/4W	
R1556	1-249-438-11	CARBON	56K	5%	1/4W	
R1559	1-249-429-11	CARBON	10K	5%	1/4W	
R1564	1-249-435-11	CARBON	33K	5%	1/4W	
R1568	1-247-891-00	CARBON	330K	5%	1/4W	
R1569	1-249-413-11	CARBON	470	5%	1/4W	
R1578	1-249-423-11	CARBON	3.3K	5%	1/4W	
R1582	1-249-411-11	CARBON	330	5%	1/4W	
R1583	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1585	1-249-441-11	CARBON	100K	5%	1/4W	
R1586	1-247-891-00	CARBON	330K	5%	1/4W	

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*A-1346-192-A D BOARD, COMPLETE
****
(KV-27S10/27S15/29RS10/29RS15)

*A-1346-193-A D BOARD, COMPLETE (KV-32S10/32S15)
****

4-382-854-11 SCREW (M3X10), P, SW (+)

<CAPACITOR>

C501	1-124-557-11	ELECT	1000MF	20%	25V
C502	1-162-131-11	CERAMIC	220PF	10%	2KV
C503	1-124-557-11	ELECT	1000MF	20%	25V
C504	1-137-366-11	FILM	0.0022MF	5%	50V
C505	1-124-916-11	ELECT	22MF	20%	25V
C506	1-128-560-11	ELECT	22MF	20%	100V
C507	1-123-947-00	ELECT	10MF	20%	160V
C508	1-129-898-00	FILM	0.0022MF (KV-27S10/27S15/29RS10/29RS15)	5%	630V
C509	1-124-916-11	ELECT	22MF	20%	25V
C511	1-123-024-21	ELECT	33MF		160V
C512	1-102-212-00	CERAMIC	820PF	10%	500V
C513	1-102-212-00	CERAMIC	820PF	10%	500V
C514	1-102-244-00	CERAMIC	220PF	10%	500V
C515	1-137-416-11	FILM	0.01MF	10%	100V
C517	1-162-116-00	CERAMIC	680PF	10%	2KV
C518	1-162-116-00	CERAMIC	680PF	10%	2KV
C519 ⚠	1-104-771-11	FILM	0.02MF	3%	2KV
C520 ⚠	1-162-134-91	CERAMIC	470PF	10%	2KV
C521 ⚠	1-136-316-51	FILM	0.056MF	5%	630V
C522	1-106-383-00	MYLAR	0.047MF		200V
C523	1-102-002-00	CERAMIC	680PF	10%	500V
C524	1-102-212-00	CERAMIC	820PF	10%	500V
C525	1-124-902-00	ELECT	0.47MF	20%	50V
C526	1-106-395-00	MYLAR	0.15MF	10%	200V
C527	1-124-341-00	ELECT	1MF	20%	200V
C528	1-136-113-00	FILM	2MF	5%	200V
C529	1-137-410-11	FILM	0.001MF	10%	100V
C530	1-104-844-11	FILM	0.62MF	5%	200V
C531	1-104-664-11	ELECT	47MF	20%	25V
C532	1-136-165-00	FILM	0.1MF	5%	50V
C533	1-124-927-11	ELECT	4.7MF	20%	50V
C534	1-136-161-00	FILM	0.047MF	5%	50V
C535	1-126-969-11	ELECT	220MF	20%	50V
C536	1-137-398-11	FILM	0.068MF	10%	100V
C537	1-126-964-11	ELECT	10MF	20%	50V
C538	1-136-161-00	FILM	0.047MF	5%	50V
C540	1-137-366-11	FILM	0.0022MF	5%	50V
C541	1-137-366-11	FILM	0.0022MF	5%	50V
C542	1-130-481-00	FILM	0.0068MF	5%	50V
C545	1-124-927-11	ELECT	4.7MF	20%	50V
C547	1-164-079-11	CERAMIC	330PF	10%	50V
C548 ⚠	1-162-116-91	CERAMIC	680PF	10%	2KV
C550	1-106-387-00	MYLAR	0.068MF	10%	200V
C553	1-164-079-11	CERAMIC	330PF	10%	50V
C561	1-162-815-11	CERAMIC	47PF	5%	500V
C595	1-123-932-00	ELECT	4.7MF	20%	160V
C598	1-124-342-00	ELECT	3.3MF	20%	160V
C600	1-126-964-11	ELECT	10MF	20%	50V
C601 ⚠	1-136-311-51	FILM	0.47MF	20%	125V
C602 ⚠	1-136-311-51	FILM	0.47MF	20%	125V
C603 ⚠	1-136-311-51	FILM	0.47MF	20%	125V
C604 ⚠	1-162-578-81	CERAMIC	0.0047MF	20%	400V
C607	1-125-495-11	ELECT	470MF	20%	200V
C608	1-125-495-11	ELECT	470MF	20%	200V
C609	1-136-169-00	FILM	0.22MF	5%	50V
C610	1-136-169-00	FILM	0.22MF	5%	50V
C611	1-136-169-00	FILM	0.22MF	5%	50V
C612	1-136-169-00	FILM	0.22MF	5%	50V
C613	1-164-625-11	CERAMIC	680PF	10%	500V
C614	1-164-625-11	CERAMIC	680PF	10%	500V
C616	1-126-964-11	ELECT	10MF	20%	50V
C617	1-126-953-11	ELECT	2200MF	20%	35V
C618	1-124-557-11	ELECT	1000MF	20%	25V
C619	1-126-952-11	ELECT	1000MF	20%	16V
C620	1-164-644-11	CERAMIC	330PF	10%	500V
C621	1-126-356-11	ELECT	220MF	20%	160V
C623	1-162-117-00	CERAMIC	100PF	10%	500V
C624	1-136-155-00	FILM	0.015MF	5%	50V
C625	1-129-719-00	FILM	0.027MF	10%	400V
C626	1-104-665-11	ELECT	100MF	20%	25V
C634	1-165-127-11	CERAMIC	470PF	10%	500V
C635	1-124-126-00	ELECT	47MF	20%	16V
C636	1-137-374-11	FILM	0.047MF	5%	50V
C637	1-124-916-11	ELECT	22MF	20%	25V
C639	1-161-740-00	CERAMIC	470PF	10%	400V
C641	1-126-933-11	ELECT	100MF	20%	10V
C642	1-137-217-11	FILM	0.01MF	5%	0
C643	1-137-218-11	FILM	0.012MF	5%	0
C645	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C646	1-126-933-11	ELECT	100MF	20%	16V
C647	1-124-916-11	ELECT	22MF	20%	25V
C684	1-124-667-11	ELECT	10MF	20%	50V
C695	1-126-964-11	ELECT	10MF	20%	50V
C2205	1-124-925-11	ELECT	2.2MF	20%	50V
C2208	1-124-925-11	ELECT	2.2MF	20%	50V
C2210	1-104-666-11	ELECT	220MF	20%	25V
C2211	1-104-664-11	ELECT	47MF	20%	25V
C2212	1-104-666-11	ELECT	220MF	20%	25V
C2213	1-136-173-00	FILM	0.47MF	5%	50V
C2215	1-136-169-00	FILM	0.22MF	5%	50V
C2216	1-126-941-11	ELECT	470MF	20%	25V
C2217	1-136-169-00	FILM	0.22MF	5%	50V
C2218	1-124-557-11	ELECT	1000MF	20%	25V

D

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The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
C2219	1-124-557-11	ELECT 1000MF 20% 25V	
C2220	1-124-925-11	ELECT 2.2MF 20% 50V	
		<CONNECTOR>	
CN104	1-573-979-21	CONNECTOR, BOARD TO BOARD 11P	
CN107	*1-580-798-11	CONNECTOR PIN (DY) 6P	
CN108	1-573-296-21	CONNECTOR, BOARD TO BOARD 10P (KV-32S10/32S15)	
CN109	1-573-296-21	CONNECTOR, BOARD TO BOARD 10P (KV-32S10/32S15)	
CN113	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
CN114	*1-580-843-11	PIN, CONNECTOR (POWER)	
CN115	1-573-298-21	CONNECTOR, BOARD TO BOARD 20P	
CN116	*1-691-915-11	CONNECTOR, BOARD TO BOARD 15P	
CN117	1-573-978-21	CONNECTOR, BOARD TO BOARD 11P	
		<DIODE>	
D501	8-719-028-71	DIODE ES1F-LF-G2	
D502	8-719-979-86	DIODE EGP20G	
D503	8-719-979-86	DIODE EGP20G	
D504	⚠ 8-719-302-44	DIODE EL1Z-V1	
D505	8-719-302-43	DIODE EL1Z	
D506	8-719-945-80	DIODE ERC06-15S	
D507	8-719-945-80	DIODE ERC06-15S	
D508	8-719-900-26	DIODE ERD29-08J	
D509	8-719-302-43	DIODE EL1Z	
D510	8-719-936-82	DIODE GP08DPKG3	
D511	8-719-936-82	DIODE GP08DPKG3	
D512	8-719-109-84	DIODE RD5.1ESB1	
D513	8-719-936-82	DIODE GP08DPKG3	
D514	8-719-911-19	DIODE 1SS119	
D515	8-719-911-19	DIODE 1SS119	
D601	8-719-911-19	DIODE 1SS119	
D602	⚠ 8-719-510-63	DIODE D4SB60L-F	
D603	8-719-500-69	DIODE S3V10SS	
D605	8-719-500-69	DIODE S3V10SS	
D607	8-719-510-02	DIODE D1NS4	
D608	8-719-510-02	DIODE D1NS4	
D609	8-719-510-02	DIODE D1NS4	
D610	8-719-510-02	DIODE D1NS4	
D611	8-719-510-02	DIODE D1NS4	
D612	8-719-031-79	DIODE D5SC4M	
D613	8-719-022-97	DIODE D2S4MF	
D614	8-719-110-33	DIODE RD12ESB3	
D615	8-719-027-43	DIODE S2L20UF	
D616	8-719-027-43	DIODE S2L20UF	
D617	8-719-027-43	DIODE S2L20UF	
D618	8-719-027-43	DIODE S2L20UF	
D619	8-719-510-02	DIODE D1NS4	
D622	8-719-911-19	DIODE 1SS119	
D623	8-719-911-19	DIODE 1SS119	
D624	8-719-911-19	DIODE 1SS119	
D626	8-719-510-48	DIODE D1N20R	
D627	8-719-510-48	DIODE D1N20R	
D628	8-719-911-19	DIODE 1SS119	
D633	8-719-110-09	DIODE RD8.2ESB3	
D634	8-719-911-19	DIODE 1SS119	
D635	8-719-911-19	DIODE 1SS119	
D636	8-719-510-48	DIODE D1N20R	
D637	8-719-911-19	DIODE 1SS119	
D638	8-719-911-19	DIODE 1SS119	
		<FUSE>	
F601	⚠ 1-576-193-11	FUSE 6.3A/125V	
	1-533-223-11	CLIP, FUSE; F601	
		<FERRITE BEAD>	
FB501	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB502	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB601	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB602	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB603	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB604	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB605	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB606	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB613	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB614	1-412-911-11	INDUCTOR, FERRITE BEAD	
		<IC>	
IC501	8-759-980-58	IC TDA8172	
IC504	8-759-103-93	IC UPC393C	
IC601	⚠ 1-810-051-11	POWER MODULE DM-48	
IC604	8-759-924-12	IC LM7805CT	
IC605	8-759-701-79	IC NJM7812FA	
IC606	8-759-701-59	IC NJM78M09FA	
IC610	8-759-708-05	IC NJM78L05A	
IC2200	8-759-980-43	IC TDA2009A	
		<COIL>	
L502	1-421-465-00	COIL, FERRITE CHOKE 68UH	
L503	1-412-524-11	INDUCTOR 8.2UH	
L504	1-410-669-31	INDUCTOR 33UH	
L505	1-459-104-00	COIL, WITH CORE	
L506	1-422-613-11	COIL, AIR CORE	
L508	1-412-553-11	INDUCTOR 3.3MMH	
L509	⚠ 1-460-173-21	COIL, HORIZONTAL LINEARITY	
L510	1-406-607-11	COIL, CHOKE 15MMH	
L513	1-412-524-11	INDUCTOR 8.2UH	
		<MODULE>	
PM501	1-810-061-11	PROTECTOR MODULE PM-38 (KV-32S10/32S15)	
	1-810-061-21	PROTECTOR MODULE PM-39 (KV-27S10/27S15/29RS10/29RS15)	
		<IC LINK>	
PS2201	⚠ 1-532-675-91	LINK, IC 1.5A	
		<TRANSISTOR>	
Q502	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q503	8-729-809-29	TRANSISTOR 2SC4159-E	
Q505	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q591	8-729-016-32	TRANSISTOR 2SC4927-01	
Q601	8-729-019-51	TRANSISTOR 2SC4834MNP	
Q602	8-729-019-51	TRANSISTOR 2SC4834MNP	
Q603	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q604	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q605	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q611	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q613	8-729-924-90	TRANSISTOR 2SB1370-EF	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite
Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION				REMARK
Q614	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q2202	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q2203	8-729-119-76	TRANSISTOR 2SA1175-HFE				
		<RESISTOR>				
R501	1-249-444-11	CARBON	0.56	5%	1/4W	F
R503	1-215-862-11	METAL OXIDE	68	5%	1W	F
R504	1-215-872-11	METAL OXIDE	3.3K	5%	1W	F
R505	1-249-443-11	CARBON	0.47	5%	1/4W	F
R506	1-215-886-11	METAL OXIDE	100	5%	2W	F
R507	1-249-429-11	CARBON	10K	5%	1/4W	
R508	1-249-425-11	CARBON	4.7K	5%	1/4W	
R509	1-249-389-11	CARBON	4.7	5%	1/4W	F
⊠R511 ⚠		CARBON			1/4W	
R512	1-249-389-11	CARBON	4.7	5%	1/4W	F
R513	1-216-385-11	METAL OXIDE	0.47	5%	3W	F
R514	1-249-429-11	CARBON	10K	5%	1/4W	
R515	1-216-363-00	METAL OXIDE	0.33	5%	2W	F
R516	1-249-401-11	CARBON	47	5%	1/4W	
R517	1-215-916-00	METAL OXIDE	680	5%	3W	F
R518	1-215-916-00	METAL OXIDE	680	5%	3W	F
R519	1-249-426-11	CARBON	5.6K	5%	1/4W	F
R520	1-249-423-11	CARBON	3.3K	5%	1/4W	
R521	1-249-411-11	CARBON	330	5%	1/4W	
R522	1-215-886-11	METAL OXIDE	100	5%	2W	F
R523	1-215-862-11	METAL OXIDE	68	5%	1W	F
⊠R524 ⚠		CARBON			1/4W	
R525	1-215-884-91	METAL OXIDE	47	5%	2W	F
			(KV-27S10/27S15/29RS10/29RS15)			
R526	1-247-887-00	CARBON	220K	5%	1/4W	
R527	1-215-861-00	METAL OXIDE	47	5%	1W	F
R528	1-247-750-11	CARBON	680	5%	1/2W	F
R530	1-215-445-00	METAL	10K	1%	1/4W	
R531	1-247-903-00	CARBON	1M	5%	1/4W	
R532	1-215-446-00	METAL	11K	1%	1/4W	
R534	1-249-385-11	CARBON	2.2	5%	1/4W	F
R535	1-216-453-00	METAL OXIDE	270	5%	2W	F
R536	1-249-389-11	CARBON	4.7	5%	1/4W	F
					(KV-32S10/32S15)	
R539	1-215-459-00	METAL	39K	1%	1/4W	
R543	1-249-419-11	CARBON	1.5K	5%	1/4W	
R546	1-249-431-11	CARBON	15K	5%	1/4W	
R547	1-247-883-00	CARBON	150K	5%	1/4W	
R550	1-215-875-11	METAL OXIDE	10K	5%	1W	F
R551	1-215-875-11	METAL OXIDE	10K	5%	1W	F
R554	1-216-371-00	METAL OXIDE	1.5	5%	2W	F
R556	1-249-411-11	CARBON	330	5%	1/4W	
R557	1-249-415-11	CARBON	680	5%	1/4W	F
R561	1-249-429-11	CARBON	10K	5%	1/4W	
R562	1-215-437-00	METAL	4.7K	1%	1/4W	
R563	1-249-429-11	CARBON	10K	5%	1/4W	
R564	1-249-433-11	CARBON	22K	5%	1/4W	
R566	1-249-435-11	CARBON	33K	5%	1/4W	
R580	1-249-411-11	CARBON	330	5%	1/4W	
R601 ⚠	1-202-888-91	SOLID	2.2M	20%	1/2W	
R602 ⚠	1-202-888-91	SOLID	2.2M	20%	1/2W	
R603	1-249-419-11	CARBON	1.5K	5%	1/4W	
R605	1-247-893-11	CARBON	390K	5%	1/4W	
R606	1-247-893-11	CARBON	390K	5%	1/4W	
R607 ⚠	1-202-933-61	FUSIBLE	0.1	10%	1/2W	F
R608	1-215-860-11	METAL OXIDE	33	5%	1W	F
R609	1-216-349-00	METAL OXIDE	1	5%	1W	F
R610	1-216-349-00	METAL OXIDE	1	5%	1W	F
R611	1-216-492-11	METAL OXIDE	82K	5%	3W	F
R613	1-215-883-11	METAL OXIDE	33	5%	2W	F
R614	1-215-883-11	METAL OXIDE	33	5%	2W	F
R615	1-249-421-11	CARBON	2.2K	5%	1/4W	
R616	1-249-417-11	CARBON	1K	5%	1/4W	
R617	1-249-377-11	CARBON	0.47	5%	1/4W	F
R618	1-249-377-11	CARBON	0.47	5%	1/4W	F
R619	1-249-377-11	CARBON	0.47	5%	1/4W	F
R621	1-249-377-11	CARBON	0.47	5%	1/4W	F
R622	1-249-377-11	CARBON	0.47	5%	1/4W	F
R623	1-249-377-11	CARBON	0.47	5%	1/4W	F
R624	1-249-377-11	CARBON	0.47	5%	1/4W	F
R625	1-249-377-11	CARBON	0.47	5%	1/4W	F
R627	1-249-377-11	CARBON	0.47	5%	1/4W	F
R628	1-249-377-11	CARBON	0.47	5%	1/4W	F
R629	1-249-388-11	CARBON	3.9	5%	1/4W	F
R630	1-215-857-11	METAL OXIDE	10	5%	1W	F
R632	1-249-417-11	CARBON	1K	5%	1/4W	F
R633	1-249-405-11	CARBON	100	5%	1/4W	F
R635	1-249-413-11	CARBON	470	5%	1/4W	F
R636	1-249-383-11	CARBON	1.5	5%	1/4W	F
R637	1-249-421-11	CARBON	2.2K	5%	1/4W	
R638	1-249-423-11	CARBON	3.3K	5%	1/4W	
R639	1-249-423-11	CARBON	3.3K	5%	1/4W	
R640 ⚠	1-202-893-91	SOLID	8.2M	20%	1/2W	
R643	1-216-379-11	METAL OXIDE	6.8	5%	2W	F
R644 ⚠	1-212-853-61	FUSIBLE	6.8	5%	1/4W	F
R645	1-249-377-11	CARBON	0.47	5%	1/4W	F
R646	1-249-429-11	CARBON	10K	5%	1/4W	
R647	1-249-433-11	CARBON	22K	5%	1/4W	
R648	1-249-414-11	CARBON	560	5%	1/4W	
R649	1-216-431-11	METAL OXIDE	560	5%	1W	F
R650	1-249-405-11	CARBON	100	5%	1/4W	F
R653	1-249-381-11	CARBON	1	5%	1/4W	
R654	1-216-385-11	METAL OXIDE	0.47	5%	3W	F
R655	1-249-417-11	CARBON	1K	5%	1/4W	F
R656	1-249-381-11	CARBON	1	5%	1/4W	
R657	1-249-417-11	CARBON	1K	5%	1/4W	
R658	1-249-389-11	CARBON	4.7	5%	1/4W	F
R659	1-247-883-00	CARBON	150K	5%	1/4W	
R660	1-249-433-11	CARBON	22K	5%	1/4W	
R661	1-249-406-11	CARBON	120	5%	1/4W	
R663	1-247-737-11	CARBON	68	5%	1/2W	F
R687	1-216-359-00	METAL OXIDE	6.8	5%	1W	F
R690	1-249-423-11	CARBON	3.3K	5%	1/4W	
R691	1-249-423-11	CARBON	3.3K	5%	1/4W	
R692	1-216-341-11	METAL OXIDE	0.22	5%	1W	F
R693	1-216-371-00	METAL OXIDE	1.5	5%	2W	F
R699	1-216-492-11	METAL OXIDE	82K	5%	3W	F
R2209	1-249-427-11	CARBON	6.8K	5%	1/4W	
R2210	1-249-435-11	CARBON	33K	5%	1/4W	
R2211	1-249-427-11	CARBON	6.8K	5%	1/4W	
R2212	1-249-435-11	CARBON	33K	5%	1/4W	
R2215	1-249-425-11	CARBON	4.7K	5%	1/4W	
R2216	1-249-437-11	CARBON	47K	5%	1/4W	
R2217	1-249-435-11	CARBON	33K	5%	1/4W	
R2218	1-249-441-11	CARBON	100K	5%	1/4W	
R2219	1-249-413-11	CARBON	470	5%	1/4W	
R2220	1-249-430-11	CARBON	12K	5%	1/4W	
R2221	1-249-430-11	CARBON	12K	5%	1/4W	
R2222	1-249-398-11	CARBON	27	5%	1/4W	
R2223	1-249-418-11	CARBON	1.2K	5%	1/4W	
R2224	1-249-418-11	CARBON	1.2K	5%	1/4W	
R2225	1-249-398-11	CARBON	27	5%	1/4W	
R2226	1-249-385-11	CARBON	2.2	5%	1/4W	F
R2227	1-249-385-11	CARBON	2.2	5%	1/4W	F

• The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation Should replacement be required, replace only with the value originally used

D H UA

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
R2228	1-249-421-11	CARBON 2.2K 5% 1/4W	
R2229	1-249-421-11	CARBON 2.2K 5% 1/4W	
		<RELAY>	
RY601⚠	1-515-684-31	RELAY	
RY602	1-515-684-31	RELAY	
		<SWITCH>	
S501	1-572-707-11	SWITCH, LEVER	
S502	1-572-707-11	SWITCH, LEVER	
		<TRANSFORMER>	
T501 ⚠	1-453-146-21	TRANSFORMER ASSY, FLYBACK (NX-A2604A3) (KV-27S10/27S15)	
⚠	1-453-416-11	TRANSFORMER ASSY, FLYBACK (NX-2604A3) (KV-29RS10/29RS15/32S10/32S15)	
T502 ⚠	1-437-195-14	TRANSFORMER, HORIZONTAL DRIVE	
T503 ⚠	1-424-545-22	TRANSFORMER, FERRITE (PMT)	
T601 ⚠	1-423-593-11	TRANSFORMER, LINE FILTER (LFT)	
T602 ⚠	1-424-220-21	TRANSFORMER, LINE FILTER	
T603 ⚠	1-423-563-11	TRANSFORMER, CONVERTER DRIVE	
T604 ⚠	1-423-615-11	TRANSFORMER, CONVERTER (PIT)	
T605	1-423-582-11	TRANSFORMER, FERRITE (SBT)	
		<THERMISTOR>	
THP601⚠	1-809-539-21	THERMISTOR, POSITIVE	
		<VARISTOR>	
VDR601	1-807-288-11	VARISTOR	
VDR602	1-810-053-11	VARISTOR	
VDR603	1-810-053-11	VARISTOR	
		**********	
	*1-646-717-11	H BOARD *******	
		<CAPACITOR>	
C1001	1-124-916-11	ELECT 22MF 20% 25V (KV-32S15)	
C1002	1-124-903-11	ELECT 1MF 20% 50V (KV-32S15)	
C1003	1-124-903-11	ELECT 1MF 20% 50V (KV-32S15)	
C1004	1-126-933-11	ELECT 100MF 20% 10V	
		<CONNECTOR>	
CN154	*1-564-520-11	PLUG, CONNECTOR 5P (KV-32S15)	
CN155	1-564-524-11	PLUG, CONNECTOR 9P	
		<DIODE>	
D1004	1-810-039-31	LED UNIT	
		<IC>	
IC1001	8-741-100-62	IC SBX1618-51	
		<JACK>	
J1001	1-695-585-11	JACK BLOCK, PIN (L TYPE) 3P	
		<TRANSISTOR>	
Q1003	8-729-422-27	TRANSISTOR 2SD601A-Q	
		<RESISTOR>	
R1001	1-247-804-11	CARBON 75 5% 1/4W (KV-32S15)	
R1002	1-249-425-11	CARBON 4.7K 5% 1/4W (KV-32S15)	
R1003	1-216-113-00	METAL GLAZE 470K 5% 1/10W (KV-32S15)	
R1004	1-249-425-11	CARBON 4.7K 5% 1/4W (KV-32S15)	
R1005	1-216-113-00	METAL GLAZE 470K 5% 1/10W (KV-32S15)	
R1007	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1008	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R1009	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1010	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R1011	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R1012	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R1014	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R1015	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R1021	1-216-045-00	METAL GLAZE 680 5% 1/10W	
		<SWITCH>	
S1001	1-692-431-21	SWITCH, TACTILE	
S1002	1-692-431-21	SWITCH, TACTILE	
S1003	1-692-431-21	SWITCH, TACTILE	
S1004	1-692-431-21	SWITCH, TACTILE	
S1005	1-692-431-21	SWITCH, TACTILE	
S1006	1-692-431-21	SWITCH, TACTILE	
S1007⚠	1-692-431-21	SWITCH, TACTILE	
		**********	
	*A-1394-526-A	UA BOARD, COMPLETE (KV-27S15/29RS15) **********	
	*A-1394-527-A	UA BOARD, COMPLETE (KV-32S15) **********	
	*A-1394-543-A	UA BOARD, COMPLETE (KV-27S10/29RS10) **********	
	*A-1394-544-A	UA BOARD, COMPLETE (KV-32S10) **********	
		<CAPACITOR>	
C401	1-163-031-11	CERAMIC CHIP 0.01MF 50V (KV-27S15/29RS15/32S10/32S15)	
C402	1-124-916-11	ELECT 22MF 20% 25V	
C405	1-124-916-11	ELECT 22MF 20% 25V (KV-27S15/29RS15/32S10/32S15)	
C406	1-124-903-11	ELECT 1MF 20% 50V (KV-27S15/29RS15/32S15)	
C407	1-124-903-11	ELECT 1MF 20% 50V (KV-27S15/29RS15/32S15)	
C408	1-124-916-11	ELECT 22MF 20% 25V (KV-27S15/29RS15/32S15)	
C409	1-124-903-11	ELECT 1MF 20% 50V	
C410	1-124-903-11	ELECT 1MF 20% 50V	

REF.NO.	PART NO.	DESCRIPTION	REMARK
C411	1-104-665-11	ELECT 100MF 20% 25V	(KV-27S10/29RS10/32S10)
C412	1-124-916-11	ELECT 22MF 20% 25V	
C413	1-126-964-11	ELECT 10MF 20% 50V	
C414	1-124-499-11	ELECT 1MF 20% 50V	
C415	1-124-499-11	ELECT 1MF 20% 50V	
C416	1-126-964-11	ELECT 10MF 20% 50V	
C417	1-124-902-00	ELECT 0.47MF 20% 50V	(KV-27S15/29RS15/32S15)
C418	1-124-902-00	ELECT 0.47MF 20% 50V	(KV-27S15/29RS15/32S15)
C419	1-124-126-00	ELECT 47MF 20% 16V	
C420	1-163-031-11	CERAMIC CHIP 0.01MF 50V	(KV-27S15/29RS15/32S10/32S15)
C421	1-124-916-11	ELECT 22MF 20% 25V	(KV-27S15/29RS15/32S15)
	1-126-959-91	ELECT 0.47MF 20% 50V	(KV-32S10)
C433	1-104-663-11	ELECT 33MF 20% 25V	(KV-27S15/29RS15/32S15)
C434	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(KV-27S15/29RS15/32S15)
C441	1-124-126-00	ELECT 47MF 20% 16V	
C442	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(KV-27S15/29RS15/32S15)
C462	1-126-933-11	ELECT 100MF 20% 16V	(KV-27S15/29RS15/32S15)

<FILTER BLOCK>

CM401	1-467-554-11	FILTER BLOCK, COMB	

<CONNECTOR>

CN141	*1-564-520-11	PLUG, CONNECTOR 5P (KV-32S15)	
CN143	1-750-395-11	SOCKET, CONNECTOR 32P	
CN146	1-573-300-21	CONNECTOR, BOARD TO BOARD 18P	(KV-27S15/29RS15/32S15)
CN147	1-750-395-11	SOCKET, CONNECTOR 32P	
CN148	1-564-517-11	PLUG, CONNECTOR 2P (KV-32S15)	

<DIODE>

D401	8-719-110-17	DIODE RD10ESB2	(KV-27S15/29RS15/32S10/32S15)
D402	8-719-110-17	DIODE RD10ESB2	
D403	8-719-110-17	DIODE RD10ESB2 (KV-27S15/29RS15/32S15)	
D404	8-719-110-17	DIODE RD10ESB2 (KV-27S15/29RS15/32S15	
D405	8-719-110-17	DIODE RD10ESB2 (KV-27S15/29RS15/32S15)	
D408	8-719-110-17	DIODE RD10ESB2	(KV-27S15/29RS15/32S10/32S15)
D409	8-719-110-17	DIODE RD10ESB2	(KV-27S15/29RS15/32S10/32S15)
D410	8-719-110-17	DIODE RD10ESB2	
D411	8-719-110-17	DIODE RD10ESB2	
D429	8-719-110-17	DIODE RD10ESB2 (KV-32S15)	
D430	8-719-110-17	DIODE RD10ESB2 (KV-32S15)	
D431	8-719-110-17	DIODE RD10ESB2 (KV-32S15)	
D436	8-719-110-17	DIODE RD10ESB2 (KV-27S15/29RS15/32S15)	
D437	8-719-110-17	DIODE RD10ESB2 (KV-27S15/29RS15/32S15)	

<IC>

IC401	8-759-634-69	IC M52470P (KV-27S10/29RS10/32S10)	
IC402	8-752-067-28	IC CXA1545AS (KV-27S15/29RS15/32S15)	
IC403	8-759-088-00	IC MN1114XFF (KV-32S10)	
IC404	8-759-164-18	IC MN1118XFF (KV-32S10)	

<JACK>

J401	1-750-515-11	TERMINAL BLOCK, S 3P	(KV-27S15/29RS15/32S10/32S15)
	1-750-517-11	JACK BLOCK, PIN 3P (KV-27S10/29RS10)	
J402	1-750-517-11	JACK BLOCK, PIN 3P	(KV-27S15/29RS15/32S15)
J404	1-750-516-11	JACK BLOCK, PIN 2P	(KV-27S15/29RS15/32S15)

<COIL>

L401	1-410-473-11	INDUCTOR 18UH	(KV-27S15/29RS15/32S15)
L403	1-410-476-11	INDUCTOR 33UH	(KV-27S15/29RS15/32S15)
L404	1-410-669-31	INDUCTOR 33UH	(KV-27S15/29RS15/32S15)

<TRANSISTOR>

Q401	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q405	8-729-216-22	TRANSISTOR 2SA1162-G	
Q406	8-729-216-22	TRANSISTOR 2SA1162-G	

<RESISTOR>

JR400	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S10/29RS10)
JR401	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S10/29RS10)
JR402	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR408	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR409	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S10/29RS10/32S10)
JR410	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR411	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR412	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR415	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S15/29RS15/32S10/32S15)
JR416	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR418	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR419	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S15/29RS15/32S15)
JR422	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR423	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S10/29RS10/32S10)
JR424	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S10/29RS10/32S10)
JR428	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR429	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR430	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR431	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR434	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR435	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-32S10)
JR498	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-32S15)
JR499	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR901	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S15/29RS15/32S10/32S15)
JW454	1-247-429-11	CARBON 10K 5% 1/4W	(KV-27S10/29RS10/32S10)
JW456	1-247-429-11	CARBON 10K 5% 1/4W	(KV-27S10/29RS10/32S10)

UA

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite
Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and mark ⚠ are critical for safety
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
R401	1-247-804-11	CARBON 75 5% 1/4W	(KV-27S15/29RS15/32S10/32S15)
R402	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R403	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R404	1-247-804-11	CARBON 75 5% 1/4W	
R405	1-216-113-00	METAL GLAZE 470K 5% 1/10W	(KV-27S15/29RS15/32S15)
R406	1-216-113-00	METAL GLAZE 470K 5% 1/10W	(KV-27S15/29RS15/32S15)
R407	1-247-804-11	CARBON 75 5% 1/4W	(KV-27S15/29RS15/32S10/32S15)
R408	1-216-113-00	METAL GLAZE 470K 5% 1/10W	(KV-27S15/29RS15/32S15)
R409	1-216-113-00	METAL GLAZE 470K 5% 1/10W	(KV-27S15/29RS15/32S15)
R410	1-249-425-11	CARBON 4.7K 5% 1/4W	(KV-27S15/29RS15/32S15)
R411	1-249-425-11	CARBON 4.7K 5% 1/4W	(KV-27S15/29RS15/32S15)
R412	1-249-425-11	CARBON 4.7K 5% 1/4W	
R413	1-249-425-11	CARBON 4.7K 5% 1/4W	
R414	1-247-804-11	CARBON 75 5% 1/4W	(KV-27S15/29RS15/32S15)
R415	1-249-425-11	CARBON 4.7K 5% 1/4W	(KV-27S15/29RS15/32S10/32S15)
R416	1-216-647-11	METAL CHIP 680 0.50% 1/10W	
R417	1-216-645-11	METAL CHIP 560 0.50% 1/10W	
R418	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-27S10/29RS10/32S10)
R421	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R425	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R431	1-216-045-00	METAL GLAZE 680 5% 1/10W	(KV-32S10)
	1-216-049-00	METAL GLAZE 1K 5% 1/10W	(KV-27S10/27S15/29RS10/29RS15/32S15)
R432	1-216-045-00	METAL GLAZE 680 5% 1/10W	(KV-32S10)
	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S10/27S15/29RS10/29RS15/32S15)
R434	1-216-045-00	METAL GLAZE 680 5% 1/10W	(KV-32S10)
	1-216-049-00	METAL GLAZE 1K 5% 1/10W	(KV-27S10/27S15/29RS10/29RS15/32S15)
R435	1-216-045-00	METAL GLAZE 680 5% 1/10W	(KV-32S10)
	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S10/27S15/29RS10/29RS15/32S15)
R439	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R440	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-32S10)
R441	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R442	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-27S10/29RS10/32S10)
R443	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-27S10/29RS10/32S10)
R444	1-216-095-00	METAL GLAZE 82K 5% 1/10W	(KV-27S15/29RS10/29RS15/32S15)
R445	1-216-073-00	METAL GLAZE 10K 5% 1/10W	(KV-27S15/29RS15/32S15)
R446	1-216-073-00	METAL GLAZE 10K 5% 1/10W	(KV-27S15/29RS15/32S15)
R450	1-216-627-11	METAL CHIP 100 0.50% 1/10W	(KV-27S10/29RS10/32S10)
	1-216-643-11	METAL CHIP 470 0.50% 1/10W	(KV-27S15/29RS15/32S15)
R451	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	(KV-27S15/29RS15/32S15)
R453	1-216-645-11	METAL CHIP 560 0.50% 1/10W	(KV-27S15/29RS15/32S15)
	1-216-653-11	METAL CHIP 1.2K 0.50% 1/10W	(KV-27S10/29RS10/32S10)
R454	1-216-025-00	METAL GLAZE 100 5% 1/10W	(KV-27S10/29RS10/32S10)
	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S15/29RS15/32S15)
R456	1-216-041-00	METAL GLAZE 470 5% 1/10W	(KV-27S15/29RS15/32S15)
R457	1-216-033-00	METAL GLAZE 220 5% 1/10W	(KV-27S15/29RS15/32S15)
R458	1-216-033-00	METAL GLAZE 220 5% 1/10W	(KV-27S15/29RS15/32S15)
R478	1-216-041-00	METAL GLAZE 470 5% 1/10W	(KV-27S15/29RS15/32S15)
R482	1-249-417-11	CARBON 1K 5% 1/4W	(KV-27S15/29RS15/32S15)
R483	1-249-417-11	CARBON 1K 5% 1/4W	(KV-27S15/29RS15/32S15)
R490	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S15/29RS15/32S15)
R491	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S15/29RS15/32S15)
R492	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-27S15/29RS15/32S15)
R1438	1-216-081-00	METAL GLAZE 22K 5% 1/10W	(KV-27S15/29RS15/32S15)

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MISCELLANEOUS

⚠	1-402-952-12	COIL, DEMAGNETIZATION (KV-32S10/32S15)
⚠	1-406-726-22	COIL, DEMAGNETIZATION (KV-27S10/27S15/29RS10/29RS15)
	1-504-531-11	SPEAKER (13.1X6.2CM)
	1-573-657-11	PLUG, F-PIN
⚠	1-751-059-11	CORD, POWER (WITH CONNECTOR) 10A/125V
⚠	8-451-275-42	DEFLECTION YOKE Y28PFA(VTM) (KV-27S10/27S15/29RS10/29RS15)
⚠	8-451-315-41	DEFLECTION YOKE Y34FXA(VTM) (KV-32S10/32S15)
⚠	8-733-723-05	PICTURE TUBE(A80JYV50X)(KV-32S10/32S15)
⚠	8-733-848-05	PICTURE TUBE (A68KZJ50X) (KV-27S10/27S15/29RS10/29RS15)

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ACCESSORIES AND PACKING MATERIALS

	3-758-286-21	MANUAL, INSTRUCTION (ENGLISH) (KV-27S10/29RS10/32S10)
	3-758-286-31	MANUAL, INSTRUCTION (FRENCH) (KV-27S10(CND)/32S10(CND))
	3-758-286-41	MANUAL, INSTRUCTION (SPANISH) (KV-29RS10/32S10(U))
	3-758-289-21	MANUAL, INSTRUCTION (ENGLISH) (KV-27S15/29RS15/32S15)
	3-758-289-31	MANUAL, INSTRUCTION (FRENCH) (KV-27S15(CND)/32S15(CND))
	3-758-289-41	MANUAL, INSTRUCTION (SPANISH) (KV-27S15(U)/29RS15/32S15(U))

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*4-035-022-01	INDIVIDUAL CARTON (KV-27S10/27S15/29RS10/29RS15)	
	*4-039-653-01	CUSHION (UPPER) (ASSY) (KV-27S10/27S15/29RS10/29RS15)	
	*4-039-654-01	CUSHION (LOWER) (ASSY) (KV-27S10/27S15/29RS10/29RS15)	
	*4-040-144-01	CUSHION (LOWER) (ASSY) (KV-32S10/32S15)	
	*4-040-146-01	INDIVIDUAL CARTON (KV-32S10/32S15)	
	*4-041-255-01	BAG, PROTECTION (KV-27S10/27S15/29RS10/29RS15)	
	*4-041-259-01	BAG, PROTECTION (KV-32S10/32S15)	
	*4-044-388-01	CUSHION (UPPER) (ASSY) (KV-32S10/32S15)	
		REMOTE COMMANDER	
	1-466-966-11	REMOTE COMMANDER (RM-Y116) (KV-27S10/29RS10/32S10)	
	9-907-826-01	COVER, BATTERY (FOR RM-Y116) (KV-27S10/29RS10/32S10)	
	1-467-621-11	REMOTE COMMANDER (RM-Y121) (KV-27S15/29RS15/32S15)	
	9-907-089-01	COVER, BATTERY (FOR RM-Y121) (KV-27S15/29RS15/32S15)	

9-965-801-01

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